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DEVELOPING DOCTRINE FOR THE FUTURE JOINT FORCE:
CREATING SYNERGY AND MINIMIZING SEAMS

by

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Preface

I chose to research air-ground integration doctrine for several reasons. First and foremost, I wanted to research a relevant topic that I was somewhat familiar with, but could also learn something new. Second, my goal in competing for an Air Force Fellowship and eventually selecting this topic was to conduct research not just to fulfill a graduation requirement. Instead, I wanted to research issues and generate results that might impact future decisions. I realize in taking on this topic that air-ground integration and joint fires have been debated over many years without much resolution. I also recognize that the ideas I propose are not the panacea for these contentious issues. My measure of success in your reading this paper is not the number of my ideas and thoughts you agree with. More so, I base the success of this research paper on its ability to generate discussion that forces the changes required to create synergy and minimize seams in air-ground integration.

Many thanks to Linda McCabe of Headquarters, Air Force Concept Development and Strategy Division who was instrumental in the initial stages of establishing my research topic. I sincerely appreciate the enthusiastic support the Institute for Defense Analyses (IDA) displays towards Air Force Fellows. Thanks to Division Director, Michael Leonard and the entire Strategy, Forces and Resources Division for creating an exceptional atmosphere for this unique education experience. I am extremely grateful for the endless sound advice and insight from my advisor, Dr. Michael Fischerkeller and reviewer, Dr. Glenn Gotz. The hours I spent talking with the both of them over the course of this research has been truly enlightening. Additionally, the opportunity to interact with the attendees of the Air Force-

Army Transformation Symposium hosted by Dr. Fischerkeller proved to be an outstanding research resource. Thanks to the IDA staff members who graciously assisted my research efforts in one way or another, specifically Major General Waldo Freeman, USA, Retired, Colonel Karl Lowe, USA, Retired, Dr. Kent Carson, John Tillson, Larry Morton, Mark Lewis and Shelley Smith. Finally, thanks to my good friend Lieutenant Colonel Jack Forsythe. He served as an excellent sounding board not just for this paper, but throughout our Air Force careers.

Most importantly, I wish to thank my wife, Sharene, and sons, Sean and Ross. Without fail, they have supported my every effort during my Air Force career to include this year of research. I am forever indebted to them for their years of sacrifice and never ending support.

Abstract

The *Joint Operations Concept (JOpsC)* describes how the *future Joint Force* intends to operate within the next 15-20 years and the key attributes required for full spectrum dominance—fully integrated, expeditionary, networked, decentralized, adaptability, decision superiority and lethality. Recent contingencies displayed rapidly executable, globally and operationally distributed, simultaneous and sequential operations characteristic of the *future Joint Force*. Despite the success of these operations, they highlighted seams and shortfalls in current joint doctrine. In order for the *future Joint Force* to fully realize the synergies of air-ground integration, joint doctrine should evolve in several key areas. This paper addresses five focus areas related to future joint air-ground integration: supporting/supported relationships, establishing directives and emerging concepts, synchronization of interdiction and maneuver, joint fires concepts and fire support coordination measures. Using the joint doctrine Command and Control Tenets and *JOpsC* as a framework, this paper proposes doctrine concepts for the *future Joint Force*. By its completion, this paper introduces new command and control relationships and processes, joint organizational structures and joint fires concepts. The proposed doctrine concepts offer a framework to analyze the desired future capabilities of the Air Force and Army. The analysis concludes by recommending several avenues to create synergy and minimize seams in future joint operations.

Executive Summary

Despite their successes, the most recent joint operations highlighted seams in joint doctrine, particularly in the area of air-ground integration. These seams can be categorized into five focus areas—supported/supporting relationships, establishing directives and emerging concepts, synchronization of interdiction and maneuver, joint fires and fire support coordination measures. The focus areas highlight the following overarching issues in existing joint doctrine that require attention in shaping doctrine for the future Joint Force:

- Predetermined support relationships based on areas of operations and doctrinal missions inhibit agility and versatility of thought, plans, operations and organizations
- Shortfalls exist in articulating to a joint cross-functional audience authorities, roles and responsibilities that can adapt in dynamic situations
- Planning and execution mindsets and processes are not conducive to integrated operations
- Command and control of joint fires is disparate and stovepiped along Service and component lines
- Coordination measures lack flexibility and responsiveness to support rapidly executed, dispersed operations

Proposed Doctrine Concepts

Grounded in current doctrine, several new doctrine concepts facilitate achieving the *Joint Operations Concept* vision. The area of operation and doctrinal mission construct for declaring support relationships must change to one determined by a joint force commander based on his operational objectives. The future Joint Force will come closer to full integration and adaptability during dynamic joint operations by expanding the guidance for establishing directive format and content. To integrate vice synchronize

interdiction and maneuver, a new joint organization capable of integrating effects via prioritized effects lists and effects tasking orders is essential to the future Joint Force. Command and control of integrated joint fires and maneuver requires responsive, interoperable *joint* organizations at all levels. Adopting component coordination elements, joint tactical action support centers and joint fire control teams into joint doctrine is a means to achieve this goal. Timely decisionmaking and execution in future joint operations make a joint *three-dimensional* common grid reference standard to facilitate rapid development of real-time digital coordination measures an imperative. The combination of these proposals provides the future Joint Force with a robust menu of responsive, interoperable and *joint* integration tools resulting in synergistic and seamless air-ground operations.

Recommendations to Create Synergy and Minimize Seams

The proposed doctrine concepts offer a framework to conduct a top-level review of the Air Force and Army future organizational constructs, transformational capabilities and interdependencies. The doctrine concepts highlight air-ground integration synergies and seams and how they might be enhanced or minimized, respectively.

Joint force commanders require capabilities-based tradeoff models to rapidly assemble and adjust joint capabilities to the most appropriate mix that can achieve the desired operational objective. Once the required capabilities have been identified, execution of future joint operations will depend upon seamless integration of command and control organizations. Seamless command and control demands development of minimum essential joint communications and information systems lists. Additionally, the component coordination element concept should expand to all components. In expanding

this concept, the Services must develop the manning requirements for their coordination elements—activation only during contingencies, fully manned and functional at all times or somewhere in between. Maximizing future Joint Force synergy entails adopting and digitizing establishing directives, prioritized effects lists and effects tasking orders to allow rapid dissemination of mission, intent and prioritized effects. Not only should control systems for integrating joint fires be developed, but also the same should be done for integrating joint maneuver. Once these systems are developed, air-ground integration during rapidly executed, dispersed operations will be dependent upon adopting responsive, digital and doctrinally-based fire support coordination measure concepts.

The *Joint Operation Concept* vision is achievable, but not without changes to existing doctrine. The proposed concepts do not represent “the approved solution,” but are instead offered as tools to stimulate discussion and generate the changes required to create synergy and minimize seams in future joint operations.

Chapter 1

Introduction

Transformation is hard, mental work. It has to have an intellectual element. What happens between the ears of the warfighter, and those who support the warfighter, is more important in my view than the technology. Innovative ideas don't have to involve revolutionary new things or new technology.

General Richard B. Myers, Chairman, Joint Chiefs of Staff
Speech to 34th Institute for Foreign Policy Analysis-Fletcher Conference
3 December 2003

Recent operations demonstrated characteristics that are expected to be the norms in joint operations within the next 15-20 years—rapidly executable, globally and operationally distributed, simultaneous and sequential operations.¹ Commenting on military operations in southwest Asia, General Tommy R. Franks, former Commander, U.S. Central Command, noted, “joint force synergy was taken to new levels of sophistication.”² He stated that Operation IRAQI FREEDOM was the first time that joint forces were able to achieve their operational objectives by “the integration of forces rather than deconfliction of forces.”³ Despite the obvious success, seams in joint doctrine detracted from joint forces reaching the full integration expected in the future Joint Force.

One might argue which aspect of integration is most important, but few can disagree that air-ground integration has historically generated the most debate. The topic has been contentious since America’s first air-land battle at Vaux, France in 1918 where the U.S.

Army was challenged with the nuances of command relationships between the pursuit and observation groups and the corps and armies they supported.⁴ The contention will likely continue unless new doctrine concepts are developed, discussed and agreed upon during the shaping of the future Joint Force. Disparate and stovepiped mindsets and processes in current joint doctrine are not conducive to integrated air-ground operations due to their lack of flexibility and responsiveness. To address these air-ground integration issues, this paper proposes new doctrine concepts in five focus areas: supported/supporting relationships, establishing directives and emerging concepts, synchronization of interdiction and maneuver, joint fires concepts, and fire support coordination measures.

This paper is organized as follows. Chapter 2 identifies the desired core capabilities and attributes of the future Joint Force as outlined in *The Joint Operations Concept (JOpsC)*. Enumerating these capabilities and attributes establishes the framework for the doctrine proposals that are developed in the subsequent chapters. Chapters 3 through 7 propose future joint doctrine concepts that are grounded in the current doctrine Command and Control Tenets. To set the stage for the doctrine proposals, each chapter identifies several current doctrine issues that, if not addressed, inhibit future Joint Force integration. The issues are followed by examples from recent joint operations to illustrate the current doctrine shortfalls. The proposals in each chapter advocate changing joint doctrine concepts, definitions, organizational constructs as well as mindsets to facilitate reaching the *Joint Operations Concept* vision of full integration. Chapter 8 uses the proposed joint doctrine concepts to frame an analysis of future Air Force and Army capabilities

applicable to air-ground integration. The paper concludes by recommending ways to create synergy and minimize seams.

Notes

¹ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 9.

² Senate, *Statement of General Tommy R. Franks, Former Commander US Central Command Before the Senate Armed Service Committee*, 108th Cong., 1st sess., 9 July 2003, 5, on-line, Internet, 1 December 2003, available from <http://armed-services.senate.gov/statemnt/2003/July/Franks.pdf>.

³ Ibid, 5.

⁴ Dr. Bert Frandsen, "America's First Air-Land Battle," *Air and Space Power Journal*, Vol. XVII, No. 4 (Winter 2003): 35, on-line, Internet, 10 December 2003, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/win03/win03.html>. This article describes the successful air-land battle at Vaux, France on 1 July 1918. Although a success, the battle was not without problems. The execution plan changed after the operation began and command relationships were not well understood. Three different commanders, the French Sixth Army and two American headquarters, thought they commanded the airpower generated by the 1st Pursuit Group.

Chapter 2

Framework for Introducing Future Joint Doctrine Concepts

A concept is a notion or statement of an idea—an expression of how something might be done

CJCSI 3010.02A, Joint Vision Implementation Master Plan

Increasing political, economic, ethnic, and religious divisions, the diffusion of power among hostile state and non-state actors, population growth and a scarcity of natural resources, and the proliferation of dangerous technologies and weaponry are dramatically increasing the range of threats to the US homeland and the nation's global interests.¹ Considering the potential range of future adversaries and conflicts, the 2001 Quadrennial Defense Review directed a movement away from a “threat-based” approach for defense to one that is “capabilities-based.”² Following this guidance, the *Joint Operations Concept* articulates an overarching concept to guide the development and acquisition of new capabilities through changes in doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF).³

The *JOpsC* identifies eight core capabilities, which are generally required to execute joint operations across a wide spectrum of threats and scenarios. These eight capabilities allow the future Joint Force to achieve full spectrum dominance focusing more on how the United States can defeat a broad array of adversary capabilities rather than who the

adversaries are and how they might individually engage U.S. national security interests.⁴

The *JOpsC* core capabilities are:

- ◆ Achieve common understanding of all dimensions of the battlespace throughout the Joint Force
- ◆ Make joint decisions and take action throughout the Joint Force faster than the opponent
- ◆ Adapt in scope, scale and method as the situation requires
- ◆ Rapidly deploy selected portions of the Joint Force that can immediately transition to execution, even in absence of developed infrastructure
- ◆ Create and sustain continuous pressure throughout the battlespace for as little or as long as it takes to accomplish strategic or operational aims
- ◆ Disintegrate, disorient, dislocate or destroy any opponent with a combination of lethal and non-lethal means
- ◆ Conduct deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns⁵

To attain these core capabilities, joint forces will require a joint and expeditionary mindset with greater levels of versatility. The *JOpsC* outlines seven required attributes to achieve this goal. The future Joint Force must be:

- ◆ **Fully Integrated** – move beyond deconfliction to fully integrated elements with all functions and capabilities focused toward a unified purpose
- ◆ **Expeditionary** – rapidly deployable, employable and sustainable throughout the global battlespace regardless of anti-access, or area-denial environments and independent of existing infrastructure
- ◆ **Networked** – linked and synchronized in time and purpose
- ◆ **Decentralized** – leverage the power of integrated joint capabilities while operating in a joint manner at lower echelons
- ◆ **Adaptable** – prepared to quickly respond to any contingency with the appropriate capabilities mix
- ◆ **Decision Superior** – state at which better-informed decisions are arrived at and implemented faster than an adversary can react, or in a non-combat situation, at a tempo that allows the force to shape the situation or react to changes and accomplish its mission
- ◆ **Lethal** – increased and refined joint force capabilities to destroy an adversary and /or his systems in all conditions and environments⁶

The combination of these core capabilities and attributes ensure future joint force commanders achieve full spectrum dominance during any contingency.⁷ Considering these capabilities and attributes, the entire DOTMLPF continuum requires review, debate

and change as required. This paper limits its focus to doctrine recognizing that as the challenges of the future evolve, joint doctrine must also evolve to keep pace and drive advancements in the other elements of the continuum.

Maintaining Relevance to Current Doctrine

Joint doctrine promotes a common perspective from which to plan, train and conduct military operations.⁸ Exercising authority and direction over this common perspective is rooted in command and control. In simple terms, joint doctrine outlines command and control concepts for the planning, training and conducting military operations. With these thoughts in mind, the Command and Control Tenets listed in Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, serve as the framework for developing doctrine concepts that achieve the *JOpsC* vision. They are:

- ◆ Clearly Defined Authorities, Roles and Relationships
- ◆ Information Management
- ◆ Implicit Communication
- ◆ Timely Decisionmaking
- ◆ Robust Integration, Synchronization, and Coordination Mechanisms
- ◆ Battle Rhythm Discipline
- ◆ Responsive, Interoperable Support Systems
- ◆ Situational Awareness
- ◆ Mutual Trust⁹

Adhering to the Command and Control Tenets during doctrine development ensures any proposed concepts facilitate a commander's ability to exercise his authority and successfully direct during joint operations. In this paper's development of new doctrine concepts, the five focus areas are linked to the Command and Control Tenets to ensure the concepts maintain relevance to those aspects of joint doctrine that are not likely to change (Figure 1).

Command and Control Tenet / Focus Area Relationship

TENET	FOCUS AREA
Clearly Defined Authorities, Roles and Relationships	Supported/Supporting Relationships
Implicit Communication	Establishing Directives
Robust Integration, Synchronization and Coordination Mechanisms	Synchronization of Interdiction and Maneuver
Responsive, Interoperable Support Systems	Joint Fires Concepts
Robust Integration, Synchronization and Coordination Mechanisms Timely Decisionmaking	Fire Support Coordination Measures

Figure 1 Command and Control Tenet / Focus Area Relationship

In the next five chapters, these relationships will be detailed as new joint doctrine concepts are introduced.

Notes

¹ Joint Staff Directorate for Operational Plans and Joint Force Development, *An Evolving Joint Perspective: U.S. Joint Warfare and Crisis Resolution in the 21st Century White Paper*, (Washington, D.C.: Joint Staff, J7, 28 January 2003), 2.

² *Quadrennial Defense Review (QDR) 2001*, Office of the Secretary of Defense (Washington, D.C.: 2001), 13-14.

³ Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3010.02A, *Joint Vision Implementation Master Plan (JIMP)* (Washington, D.C.: 2001), GL-2 in *Joint Operations Concepts*, 3.

⁴ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 8.

⁵ Ibid, 10-14. Per the *Joint Operations Concept*, the term “joint force” in the broadest sense refers to the Armed Forces of the United States. Joint Force (title case) is used when the discussion refers to every element of the Armed Forces. The term joint force (lower case) refers to an element of the Armed Forces that is organized for a particular mission or task. Similarly, use of Joint Force Commander (title case) refers to

Notes

a combatant commander. The term joint force commander (lower case) refers to a commander of a joint force at any level of joint command.

⁶ Ibid, 14-17.

⁷ Ibid, 8. Full spectrum dominance is the defeat of any adversary or control of any situation across the full range of military operations. Full spectrum dominance is based on the ability to sense, understand, decide and act faster than any adversary in any situation. These actions are preceded by decisions that are led by better understanding of the battlespace.

⁸ Joint Publication 1, *Joint Warfare of the Armed Forces of the United States*, 14 November 2000, I-8.

⁹ Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, 10 July 2001, III-14 - 16.

Chapter 3

Supported/Supporting Relationships

There is still a tendency in each separate unit...to be a one-handed puncher. By that I mean that the rifleman wants to shoot, the tanker to charge, the artilleryman to fire...That is not the way to win battles. If the band played a piece first with the piccolo, then with the brass horn, then with the clarinet, and then with the trumpet, there would be a hell of a lot of noise but no music. To get the harmony in music each instrument must support the others. To get harmony in battle, each weapon must support the other. Team play wins. You musicians of Mars must not wait for the band leader to signal you...You must each of your own volition see to it that you come into this concert at the proper place and at the proper time...

General George S. Patton, Jr.,
8 July 1941, address to the men of the 2nd Armored Division,
The Patton Papers, Vol. II, 1974

The *JOpsC* describes the future Joint Force achieving a common understanding, making decisions and taking joint action faster than its opponent.¹ To do so during distributed operations, adhering to the Command and Control Tenet *clearly defined authorities, roles and relationships* is an imperative. By the same token, *adaptability* is a required attribute of the future Joint Force that will ensure unity of effort during joint air-ground operations. Unfortunately, current joint doctrine and definitions have implied and encouraged a mindset of associating support relationships with areas of operations and doctrinal missions, thereby inhibiting adaptability. Achieving the goals of *clearly defined*

authorities, roles and relationships and *adaptability* requires changes to the following two current doctrine concepts:¹

- Areas of operations exclusive to land and maritime commanders; as such, land and maritime commanders are declared supported commanders within their area of operations
- Designating the air component commander as the supported commander for certain theater-wide missions

While perhaps appropriate in the past, support relationships must not be predetermined in doctrine by virtue of an area of operations or doctrinal mission. Instead, joint doctrine must provide a joint force commander (JFC) the flexibility to assign support relationships to best achieve his objectives. Toward this end, this chapter proposes changing the area of operations and mission association construct for support relationships.

Demonstrated Gaps in Support Relationships

As one looks at the last three major combat operations, the declaration made in current joint doctrine that a land or maritime area of operations would be designated with associated supported/supporting relationships may no longer hold true. The Air War over Kosovo did not have a land component or a land area of operations. By default, the air component became the supported commander in the area of operations. The early phases of the Afghanistan campaign provides another example of where clearly defined supported/supporting relationships consistent with doctrine were not established.² Although the special operations component commander was eventually designated the supported commander, one might argue whether that was the right choice considering the

¹ For more detailed background on current supported/supporting relationship doctrine reference Appendix A.

operational objective and mission execution. After striking many of the fixed targets, the focus switched to striking an elusive target set—Taliban and Al Qaeda operatives. Due to the burdensome approval process, opportunities to attack fleeting leadership targets of opportunity were missed.³ The approval process challenges were likely the result of a combination of factors: there was no land component or its habitually associated tactical air control system; the process for finding and engaging time sensitive targets was not in place; and a complicated command and control structure was employed.⁴

As a result of the lessons learned in Afghanistan, a new approach was employed for Operation IRAQI FREEDOM (OIF). Due to concerns about possible SCUD attacks on Iraq's western neighbors, the air component was designated the supported commander in the western area of operations to execute time sensitive targeting against fleeting targets.⁵ To achieve his objectives, the JFC used his authority to designate the mission responsibility, area of operations and support relationships to best take advantage of the joint capabilities available. In fact, OIF had three areas of operations—south, west and north. The southern fight was a fast moving campaign towards Baghdad.⁶ The western fight was focused on logistic nodes, command and control facilities and the location of SCUD launchers.⁷ The northern fight consisted of special operations forces, the 173d Airborne Brigade and Kurdish forces pressing Baghdad defenses from the north.⁸ Each area of operations had a different operational objective and supported/supporting relationship.

New Approaches for Designating Support Relationships

In light of the previous discussion, this paper proposes the following new definition for areas of operations to draw a distinct link to the supported commander and his assigned operational objectives.

Area of operations - an operational area defined by the joint force commander *in which a supported commander will complete a task or set of tasks to achieve an assigned operational objective(s).*⁹ Areas of operations do not typically encompass the entire operational area of the joint force commander, but may be based on the assigned operational objective(s). In any case, areas of operations should be large enough for component commanders to accomplish their missions and protect their forces.

This proposed definition moves away from area of operations and resultant support relationships being exclusive to surface force commanders and are applicable to *all* component commanders. As such, it also follows the precedent established in Joint Publication 3-30 of not tying support relationships to specific missions.

Until Joint Publication 3-31, *Command and Control for Joint Land Operations* was published on 23 March 2004, Joint Publication 3-30 and the Joint Publication 3-05 series, addressing special operations, were the only approved joint publications for component-specific operations. Prior to March 2004, the lack of approved joint doctrine for land and maritime operations and predetermined support relationships created a doctrine deficiency worth addressing.

In the drafting of Joint Publication 3-30, the JFACC as a supported commander was an issue of debate. Initial drafts included previously existing language designating the JFACC as the supported commander for certain doctrinal missions. This language was disputed within the joint community resulting in two options being presented to the Service operations deputies for resolution. The first option recommended maintaining

the existing language designating support relationships by mission. The second option recommended listing the supported missions as JFACC *responsibilities* and emphasizing the JFC's authority to designate supported/supporting relationships.¹⁰ As shown below in the excerpt from Joint Publication 3-30, the second option was selected and designated as the model for Joint Publication 3-31, *Command and Control of Joint Land Operations* and Joint Publication 3-32, *Command and Control of Joint Maritime Operations*.

*The JFACC is given the authority necessary to accomplish missions and tasks assigned by the JFC. The JFACC typically exercises tactical control over air capabilities/forces made available for tasking. The JFC may also establish supporting and supported relationships between the JFACC and other components to facilitate operations. The JFACC conducts joint air operations in accordance with the JFC's intent and concept of the operation (emphasis added).*¹¹

The approval of Joint Publication 3-30 establishes a construct to give a joint force commander the flexibility to designate support relationships to best execute his concept of operations. It clarifies the joint force air component commander's (JFACC) authority and command relationships and the JFC's authority to determine supported/supporting relationships.

Joint Publication 3-31 has moved in the right direction, but not as far as it probably should particularly when addressing area of operations. The publication states that areas of operations are typically defined by the JFC for the land and maritime component and the JFLCC will be the supported commander for operations conducted within the area of operations when designated by the JFC and may be the supporting commander for some functions.¹² This language establishes conditions inhibiting vice enhancing the JFCs authority and flexibility.

Summary

The current construct of associating support relationships to areas of operations and doctrinal missions may have worked well in times when operations were linear with more joint deconfliction than joint integration. As we look towards dispersed, fully integrated and adaptable operations of the future, supported/supporting relationships should not be “mentally” constrained to certain components of the joint force based on a particular mission or area. This paper advocates a construct where support relationships are not predetermined in doctrine. Rather, a joint force commander should have the flexibility to designate support relationships in ways not previously conceived to more effectively support his concept of operations. Having this flexibility codified in doctrine ensures the future Joint Force can adapt in scope, scale and method as the situation dictates.¹³

Notes

¹ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 10-11.

² Colonel Mike Findlay, USA, Lieutenant Colonel Robert Green, USA, and Major Eric Braganca, USA, “Fires and Maneuver – Challenges on the Noncontiguous Battlefield,” *The Air Land Sea Bulletin*, Issue 2003-1, (March 2002): 19-21.

³ Amy Butler, “Moseley: Time Sensitive Targeting Improved From Afghanistan to Iraq,” *Inside Missile Defense*, 25 June 2003, n.p., on-line, Internet, 17 December 2003, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=MISSILE-9-13-8.

⁴ Lieutenant Colonel Franklin Walden and Master Sergeant Hal Sullivan, “Joint Close Air Support in Support of Operations ENDURING FREEDOM and IRAQI FREEDOM,” 18th Air Support Operations Group briefing, AFDD 2-1.3 Counterland Rewrite Conference, Langley AFB, Va., 25 June 2003, slide 3.

⁵ “DOD Briefing On Coalition Forces Air Component,” *Inside Defense.com – Defense Plus*, 5 April 2003, n.p., on-line, Internet, 17 December 2003, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=dplus2003_978.

Butler, n.p.

Colonel Jerry Dillion, Chief of SCUD Strategy, Coalition Air and Space Operations Center, Operation IRAQI FREEDOM, interviewed by author, 13 January 2004.

Notes

⁶ “CENTCOM Operation Iraqi Freedom Briefing ~ 23 March 2003,” 23 March 2003, n.p., on-line, Internet, 20 November 2003, available from http://www.centcom.mil/CENTCOMNews/transcripts/transcript_list.htm.

⁷ Ibid.

⁸ “CENTCOM Operation Iraqi Freedom Briefing ~ 27 March 2003,” 27 March 2003, n.p., on-line, Internet, 20 November 2003, available from http://www.centcom.mil/CENTCOMNews/transcripts/transcript_list.htm.

“CENTCOM Operation Iraqi Freedom Briefing ~ 1 April 2003,” 1 April 2003, n.p., on-line, Internet, 20 November 2003, available from http://www.centcom.mil/CENTCOMNews/transcripts/transcript_list.htm.

⁹ Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 379. Current joint doctrine defines objective as: 1) the clearly defined, decisive, and attainable goals towards which every military operation should be directed, or; 2) the specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander’s plan, or, an enemy force or capability without regard to terrain features).

¹⁰ “Air & Space Doctrine Application Exercise,” briefing, 15 July 2003, AY 03-04 ISS/SSS *Reindoctrination Read Ahead*, CD-ROM, Headquarters, Air Force Doctrine Center, July 2003, slides 193-196.

¹¹ Joint Publication 3-30, *Command and Control for Joint Air Operations*, 5 June 2003, II-1.

¹² Joint Publication 3-31, *Command and Control for Joint Land Operations*, 23 March 2004, II-2 and III-2.

¹³ *Joint Operations Concept*, 11.

Chapter 4

Establishing Directives and Emerging Concepts

It's all about commander's intent, to me. Commander's intent does not mean that I have to be monitoring every minute. Do I like to have good situational awareness? Yes, I want the best technology and the best capability I can get. But there is no way I think that you can take the place of that timeless commander's intent.

Major General James Mattis, USMC
Commanding General, 1st Marine Division
Operation IRAQI FREEDOM

The Command and Control Tenet *implicit communication* and its underlying concepts, *commander's intent* and *mission-type orders*, are important aspects to clearly defining authorities, roles and relationships. An *establishing directive* is the tool which facilitates communicating authorities, roles and relationships, but regrettably this tool lacks sufficient detail in the following areas:²

- Clear guidance on specific format for execution of joint operations
- Ability to communicate authorities, roles and responsibilities to a joint cross-functional audience
- Avenues for adapting command relationships during rapidly executed, integrated operations

Not discounting the goal of *implicit communication* is to minimize restrictive measures and detailed instructions through the concepts of *commander's intent* and *mission-type orders*, joint doctrine guidance for *establishing directive* format and content

² For more detailed background on current command and control doctrine reference Appendix B.

should be explicit and contain more detail. This chapter proposes expanding *establishing directive* guidance and introduces emerging command and control concepts that may facilitate realizing the *JOpsC* vision of a fully integrated Joint Force.

Doctrine Disconnects in Establishing Directives

As the following examples illustrate, failure to clearly communicate command relationships, commander's intent and mission-type orders can impact the execution of joint operations. The command relationships during the initial phases of Operation ENDURING FREEDOM (OEF) were unclear and not resolved until weeks after the operations in Afghanistan were underway.¹ The lack of clarity and burdensome target approval process impacted the efficiency of the operation. Designated the supported commander in western Iraq, the air component had difficulty drafting commander's intent and mission-type orders that were easily understood and executable by the supporting joint forces.² Prior to deploying, elements of the joint force practiced the time sensitive targeting mission on the Nellis ranges for several weeks. As a result of these mission rehearsals, tactics, techniques and procedures (TTP) were written for use during actual mission execution. In addition to the TTPs, elements of the joint force expected an *establishing directive* with *commander's intent* and *mission-type orders*. Unaware of the expectation, the air component relied on the published TTPs and never produced an *establishing directive*.³

In a final example, the joint force air component commander's non-published intent was to be combat effective versus combat efficient during OIF's rush to Baghdad from the south. This drove the use of close air support stacks to ensure the right mix of effects were available to support the ground commander 24 hours a day.⁴ This sometimes

resulted in aircraft returning to base without expending ordnance. Contradictory to the JFACC's intent, aircrews established artificial fuel limits, which allowed them to expend ordnance within the Marine Expeditionary Force area of operations if not used in a timely manner in the V Corps area of operations.⁵ This disconnect between the commander's intent and mission execution may have been caused by the lack of a published or clearly delineated commander's intent in a daily air tasking order addressing the all-important "why" element of mission-type orders.⁶

Proposals for Expanding the Establishing Directive Concept

The definition for command and control that currently exists in joint doctrine is adequate. However, *establishing directive* guidance lacks sufficient detail regarding command and support relationships. This paper proposes several changes to *establishing directive* guidance that more explicitly communicate authorities, roles and responsibilities thereby minimizing confusion in joint operations. The proposed changes have been italicized for ease of identification.

An establishing directive is normally issued to specify the purpose of the support relationship, the effect desired and the scope of the action to be taken. *The establishing directive should be published in the form of a campaign plan, operation plan and/or operation order. The published establishing directive should include sufficient detail to ensure subordinate and supporting commanders understand and can execute the assigned mission.* It should also include:

- *commander's intent*
- the forces and other resources allocated to the supporting effort
- the time, place, level and duration of the supporting effort
- *mission-type orders for the effort*, relative priority of the supporting effort *and possible command relationship transition points*
- the authority, if any, of the supporting commander to modify the supporting effort in the event of exceptional opportunity or an emergency
- the degree of authority granted to the supported commander over the supporting effort

Unless specifically limited by the establishing directive, the supported commander will have the authority to exercise general direction over the supporting effort. General direction includes the designation and prioritization of targets or objectives, timing and duration of the supporting action and other instructions necessary for coordination and efficiency.⁷

While this proposed *establishing directive* guidance is similar to the existing guidance, the differences require some explanation. First is the statement, *the establishing directive should be published in the form of a campaign plan, operation plan and/or operation order*. The reason for the specificity is that Joint Publication 0-2 uses the term *establishing directive* five different times, all in the context of command relationships. An *establishing directive* can come in several different forms and be issued by the Secretary of Defense or any level of joint command.

When designating command relationships for joint operations, current joint doctrine clearly states this designation is done with an *establishing directive*. However, determining the format or specific document is not as clear. In the early stages of a strategic event, an *establishing directive* can be one of several types of orders (warning, alert or planning), which will outline command relationships for planning purposes. Determining a campaign plan (or its derivative operation plan and operation order) is the *establishing directive* format for execution of joint operations requires a detailed review of Joint Publication 3-0, *Doctrine for Joint Operations*, and Joint Publication 5-0, *Doctrine for Planning Joint Operations*.⁸ By clearly stating the required *establishing directive* format for joint operations execution, the proposed change takes the first step in the future Joint Force achieving a common understanding when establishing command and control relationships.

The next recommended change, *the published establishing directive should include sufficient detail to ensure subordinate and supporting commanders understand and can execute the assigned mission*, addresses the *establishing directive* format and content specifically. Joint Publication 5-0 series and CJCSM 3122 series documents provide excellent overarching examples of campaign plan, operations plan and operation order formats. However, current joint doctrine fragments the desired full integration of the future Joint Force.

The approved and draft functional component doctrine publications—air, land, maritime and special operations—include discussion and/or examples of their respective operation plan and operation order formats. However, each focuses on their respective domain of operations and varies in format and level of detail. They appear to be written more for subordinate commanders *within* the component than for all commanders who might support the operational task(s) assigned to the component commander. This construct creates seams, rather than synergy for the joint force. To achieve the adaptability and integration desired, the future Joint Force should adhere to a single format that communicates to a joint cross-functional audience vice continuing to use the stovepiped and diverse formats found in current doctrine.

Clearly defined authorities, roles and relationships require unambiguous communication to minimize seams in joint operations. Therefore, this paper recommends adding *commander's intent* and *mission-type orders* to the *establishing directive* guidance. In his article, *Commander's Intent: An Aerospace Tool for Command and Control*, Lt Col Michael Straight highlights the varied emphasis in this area by reviewing Service doctrine. Although the Air Force employs the concepts, it places less emphasis

on them in its doctrine than do the other Services.⁹ The Air Force lacks the doctrinal framework and training to effectively communicate intent across all levels of joint command. The previously discussed OIF time sensitive targeting and close air support examples illustrate how this lack of doctrinal emphasis may have hampered joint operations. Explicitly requiring *commander's intent* and *mission-type orders* ensures these concepts receive the appropriate emphasis and are not left to implication and potential omission. Adopting this proposal helps achieve the *JOpsC* vision of decentralized execution where joint capabilities are organized and interdependently applied at increasingly lower levels.¹⁰

The next proposed addition is *possible command relationship transition points*. Adding this phrase helps to satisfy one of the future Joint Force common core capabilities—to be able to adapt in scope, scale, and method as the situation requires.¹¹ The future Joint Force must have the ability to execute one operation while remaining ready to shift to another, which may or may not be in the same operational area.¹² Based on this premise, the concept of operations can require a change in command relationships during execution in response to an adversary's actions.

In his paper, *Employing an Air Maneuver Force: Battlefield Air Operations with Surface Maneuver in a Joint Campaign*, Major James Jinnette discusses the importance of rapid role exchange and the Army doctrinal concept of battle handover.¹³ Major Jinnette provides several historical examples where air and land forces actively switched between a shaping force and a force actively engaged, effectively a joint force battle handover. However, a joint battle handover definition or concept does not currently exist in doctrine and the Army ties the concept to a point on the ground. This paper proposes

including and expanding the concept in joint doctrine addressing specific phases or tactical events where a rapid exchange of command relationships might occur.¹⁴ Including the language *possible command relationship transition points*, prompts a joint force commander to account for and document “joint battle handovers” in his campaign plans, operations plans and operation orders.

Emerging Command and Control Concepts

Having completed the discussion on proposed changes to *establishing directive* guidance, this section reviews recent and ongoing efforts related to command and control. In the remaining chapters, these emerging concepts are integrated with the doctrine concepts proposed in this paper. With further development, the integrated concepts can facilitate achieving the *JOpsC* vision.

During the conduct of Millennium Challenge 2002 (MC02), U.S. Joint Forces Command (USJFCOM) explored new concepts for future joint operations to validate the Rapid Decisive Operations concept.¹⁵ Associated with effects-based operations (EBO), a concept not yet thoroughly defined in joint doctrine, the joint tactical actions (JTA) concept was examined. JTAs are the range of actions undertaken by functional component commanders to achieve effects.¹⁶ The JTA concept prevents the stovepiped use of force by a single component by using the best mix of capabilities from across the joint force to achieve a desired effect.

Two tools that proved effective in integrating effects during MC02 were the prioritized effects list (PEL) and effects tasking order (ETO). Air tasking orders and maritime tasking orders are excellent tools for their purpose, but are domain-centric and not effective in integrating the desired effects across the joint force.¹⁷ The effects tasking

order concept provides an avenue to reinforce commander's intent and issue mission-type orders to a joint force and achieve the desired synergistic effect.

One of the desired capabilities of the future Joint Force is to be able to rapidly deploy selected portions of the joint force that can seamlessly transition to execution. Addressing this requirement, the standing joint force headquarters (SJFHQ) concept, introduced in the 2001 Quadrennial Defense Review, is a full-time, joint command and control element within a regional combatant commander's staff.¹⁸ The SJFHQ concept makes available to combatant commanders a standing, trained and equipped command and control capability focused on a designated area, which can respond to emerging contingencies.¹⁹ This concept was also examined during MC02 and demonstrated significant improvements in the combatant commander's readiness by enhancing pre-crisis contingency planning and rapidly establishing an operational joint task force headquarters.²⁰ Although still in development, the SJFHQ concept is theoretically being employed by U.S. Special Operations Command (USSOCOM) with the establishment of its 100-person Center for Special Operations that is solely focused on planning for the global war on terrorism.²¹

The *JOpsC* envisions a networked future Joint Force with reachback beyond its organic capabilities.²² Strategic lift and anti-access constraints are sure to make having a reachback capability an imperative. The future Joint Force will not have the luxury of deploying an OIF-size 1,900-person air operations center requiring airlift by more than 30 C-17s, 24 C-5s and 90 C-130s.²³ In fact, the Secretary of Defense recognizes reachback as one of the most promising ways to decrease forward presence footprints. With a 9 July 2003 memo, he developed a senior-level steering group and asked the

Services “to submit Program Change Proposals to employ the reserve component in CONUS-based operations providing reachback capabilities in support of forward-deployed forces.”²⁴

The use of reachback is not a far-fetched concept and was actually employed with success during OEF and OIF. Central Command headquarters, separated from its execution elements by over 7,000 miles and multiple time zones, achieved unprecedented real-time situational awareness and connectivity during OEF.²⁵ During OIF, reconnaissance platforms operating over Iraq beamed their data back to Langley Air Force Base, Virginia where intelligence specialists conducted real-time analysis and sent their results back to the air and space operations center in a matter of seconds. Additionally, Global Hawk and Predator unmanned aerial vehicles (UAV) flying missions over Iraq were piloted from CONUS-based locations. This represents a significant reachback accomplishment considering that just one year prior in OEF, Predators were piloted in theater.²⁶

Changes in organizational concepts for command and control have also been proposed and adopted in practice. In studying OEF, Dr. Milan Vego suggests that a combatant commander should remain at his main headquarters so that he might effectively monitor events across his entire area of responsibility (AOR) and not get bogged down in tactical details at the expense of operational and strategic issues.²⁷ Dr. Vego proposes establishing theaters of operations commanded by a three-star flag officer directly subordinate to the combatant commander.²⁸ In effect, this is what U.S. Central Command elected to do. Although General Franks forward deployed during OIF, he did establish joint task forces to focus on operations in the Horn of Africa and Afghanistan

prior to combat operations commencing in Iraq.²⁹ Continuing this thought process, Michael P. Noonan and Mark R. Lewis recommend taking joint task force organization one-step further in their article *Conquering the Elements: Thoughts on Joint Force (Re)Organization*. They highlight that joint forces are organized by the environmental medium in which they perform and that jointness is reserved for very-high level component commands. Consistent with the JTA concept discussed earlier, Noonan and Lewis propose organizing along mission-oriented functional requirements. To handle multi-dimensional operations similar to what was executed in OIF; joint force components might include strike, security, support and information operations component commanders as an example.³⁰ Similar alternative command structures were examined during Unified Quest 2003, a co-sponsored Army and USJFCOM wargame and during the follow-on USJFCOM wargame Pinnacle Impact 2003.³¹ Pinnacle Impact recommended adding a joint information commander on the same level as the other component commanders.³² The point of introducing these alternative command and control structures is not to advocate a particular position. Rather, it is to highlight that the future Joint Force must be adaptable and not wedded to past organizational constructs.

Summary

This paper proposes combining the recommend *establishing directive* changes with the emerging command and control concepts and builds on this proposal in the remaining chapters. In adopting the *establishing directive* proposals, joint force commanders will more explicitly communicate command relationships, commander's intent and mission-type orders allowing the future Joint Force to operate more effectively at lower echelons. Joint tactical actions will integrate the best mix of available capabilities to achieve the

desired effects. Prioritized effects lists and effects tasking orders provide an overarching construct to drive prioritization and execution of effect-based operations. Taking advantage of reachback capabilities, future joint command and control structures and organizations will be more adaptable than in the past. Ultimately with these concepts, the future Joint Force will seamlessly and rapidly conduct integrated joint operations with a smaller, more adaptable forward-deployed footprint.

Notes

¹ Colonel Mike Findlay, USA, Lieutenant Colonel Robert Green, USA, and Major Eric Braganca, USA, "Fires and Maneuver – Challenges on the Noncontiguous Battlefield," *The Air Land Sea Bulletin*, Issue 2003-1, (March 2002): 19.

Colonel Gary Crowder, Chief of the Strategy, Concepts, and Doctrine Division, Headquarters Air Combat Command, interviewed by author, 8 December 2003.

² Colonel Jerry Dillon, Chief of SCUD Strategy, Coalition Air and Space Operations Center, Operation IRAQI FREEDOM, interviewed by author, 13 January 2004.

³ Ibid, n.p.

⁴ "DOD Briefing On Coalition Forces Air Component," *Inside Defense.com – Defense Plus*, 5 April 2003, n.p., on-line, Internet, 17 December 2003, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=dplus2003_978.

⁵ Lieutenant Colonel Steve Gray, "Evolving FSCM/C2 Issues: An Air Combat Command Perspective," briefing, Air Force-Army Transformation Symposium, Institute for Defense Analyses, Alexandria, Va., 30 October 2003, slide 4.

⁶ Major Michael E. Fischer, "Mission-Type Orders In Joint Air Operations: The Empowerment of Air Leadership," (School of Advanced Airpower Studies Thesis, Maxwell AFB, Ala., May 1995), 57.

⁷ Joint Doctrine Encyclopedia, 16 July 1997, 662. This definition is adapted from the establishing directive discussion in the Supported Commander section of the document.

⁸ Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, III-7.

Joint Publication 5-0, *Doctrine for Planning Joint Operations*, 13 April 1995, II-20.

⁹ Lieutenant Colonel Michael Straight, "Commander's Intent: An Aerospace Tool for Command and Control?" *Airpower Journal* X, No. 1 (Spring 1996): 37, on-line, Internet, 15 December 2003, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/spring96.html>.

¹⁰ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 9.

¹¹ Ibid, 11.

¹² Ibid, 12.

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¹³ Major James Jinnette, "Employing an Air Maneuver Force: Battlefield Air Operations with Surface Maneuver in a Joint Campaign," (Maxwell AFB, Ala.: Air Command and Staff College, June 2003), 17.

¹⁴ Field Manual (FM) 101-5-1, *Operational Terms and Graphics*, 30 September 1997, 1-18. Battle Handover is defined as a designated point (phase line) on the ground where responsibility transitions from the stationary force to the moving force and vice versa. It is within direct fire range and observed indirect fire range of the stationary force.

¹⁵ *Millennium Challenge 2002 Executive Report*, (Norfolk, Va.: United States Joint Forces Command, March 2003), 2-4. Millennium Challenge 2002 (MC02) was a joint war fighting field experiment conducted from 24 July – 15 August 2002. MC02 involved over 13,500 troops from across all services. The joint force headquarters operated out United States Joint Forces Command Suffolk complex, while the bulk of computer simulation and live force action took place at various locations throughout the southwest United States.

¹⁶ Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, 17 November 2003, 118. AFDD 1 defines effects-based operations as actions taken against enemy systems designed to achieve specific effects that contribute directly to desired military and political outcomes.

Millennium Challenge 2002 Executive Report, 18.

¹⁷ *Ibid*, 18.

¹⁸ *Quadrennial Defense Review (QDR) 2001*, Office of the Secretary of Defense (Washington, D.C.: 30 September 2001), 32-33. The current concept evolved from the 2001 QDR's Standing Joint Task Force Headquarters concept.

¹⁹ *U.S. Joint Forces Command, Joint Concept Development And Experimentation's Concept Primer: Standing Joint Force Headquarters*, (Norfolk, Va.: U.S. Joint Forces Command, October 2003), 1.

²⁰ *Ibid*, 1-2.

²¹ Vice Admiral Eric T. Olson, USN, Deputy Commander, U.S. Special Operations Command, address to The 34th IFPA-Fletcher Conference on National Security Strategy and Policy Security Planning and Military Transformation after Iraqi Freedom, 2 December 2003, n.p., on-line, Internet, 15 January 2004, available from <http://www.ifpafletcherconference.com/>.

²² Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 440. Reachback is defined as the process of obtaining products, services, and applications, or forces, or equipment, or material from organizations that are not forward deployed.

²³ U.S. Central Command Air Forces, *Operation IRAQI FREEDOM - By the Numbers*, (Prince Sultan Air Base, Kingdom of Saudi Arabia: Analysis and Assessment Division, 30 April 2003), 3. By 21 Mar 2003, the combined air operations center had grown from a pre-OIF size of 672 personnel to 1,966 personnel.

Laura M. Colarusso and Gordon Trowbridge, "The Future is NOW: Reach-back technology lets airmen fight in Iraq from comfort of home," *Air Force Times*, 10 November 2003, 14.

Notes

²⁴ Elizabeth Rees, "DOD Creates Senior Officer Steering Group To Study Reachback," *Inside the Air Force*, 17 October 2003, 1, on-line, Internet, 17 October 2003, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=AIRFORCE-14-42-2.

²⁵ Senate, *Statement of General Tommy R. Franks, Former Commander US Central Command Before the Senate Armed Service Committee*, 108th Cong., 1st sess., 9 July 2003, 7.

²⁶ Colarusso, 14.

²⁷ Dr. Milan Vego, "What Can We Learn from Enduring Freedom?," *Proceedings* 128/7/1,1193 (July 2002): n.p., Internet, 19 December 2003, available from <http://www.usni.org/Proceedings/Articles02/PROvego07.htm>.

²⁸ Ibid.

²⁹ *CJTF-Horn of Africa History Fact Sheet*, (Tampa, Fla.: U.S. Central Command, 23 July 2003), n.p., on-line, Internet, 7 January 2004, available from <http://www.cjtfhoa.centcom.mil/factsheet.asp>. The core Combined Joint Task Force-Horn of Africa headquarters was formed from elements of the 2d Marine Division in October 2002. The headquarters sailed from Morehead City, N.C. on Nov. 13, 2002, aboard the USS Mount Whitney joining forces already at Camp Lemonier in Djibouti to form what is the current organization of CJTF-HOA.

Jim Garamore, "Operation Mountain Lion Continues, Task Force Assumes Control," *American Forces Press Service*, 6 June 2002, n.p., on-line, Internet, 7 January 2004, available from http://www.defenselink.mil/news/Jun2002/n06062002_200206063.html. On 31 May 2002, Combined Joint Task Force 180 assumed control of operations in Afghanistan. Commanded by a lieutenant general, this task force is responsible to USCENTCOM and to the Secretary of Defense and commands U.S. and coalition forces in Afghanistan and supporting troops in Pakistan, Tajikistan and Uzbekistan.

³⁰ Michael P. Noonon and Mark R. Lewis, "Conquering the Elements: Thoughts on Joint Force (Re)Organization," *Parameters: U.S. Army War College Quarterly*, XXXIII No. 3 (Autumn 2003): 11, on-line, Internet, 8 September 2003, available from <http://carlisle-www.army.mil/usawc/Parameters/03autumn/noonan.pdf>.

³¹ Sandra I. Erwin, "War-Gaming a Future That's Much Like Today," *National Defense Magazine*, June 2003, n.p., on-line, Internet, 28 October 2003, available from <http://www.nationaldefensemagazine.org/article.cfm?Id=1116>.

³² U.S. Joint Forces Command, *Joint Concept Development and Experimentation, PINNACLE IMPACT 2003: Joint Concept Development Seminar Wargame*, (Norfolk, Va.: U.S. Joint Forces Command, 14 July 2003), 14.

Chapter 5

Synchronization of Interdiction and Maneuver

Military doctrine cannot be allowed to stagnate, especially an adaptive doctrine like maneuver warfare. Doctrine must continue to evolve based on growing experience, advancements in theory, and the changing face of war itself.

General C. C. Krulak, USMC
Commandant of the Marine Corps
Marine Corps Doctrinal Publication 1, *Warfighting*

Joint Publications 3-0, *Doctrine for Joint Operations*, and 3-03, *Doctrine for Joint Interdiction Operations*, describe the synergistic effects that can be achieved by synchronizing interdiction and maneuver. However, recent operations have demonstrated synchronization of interdiction and maneuver was driven more by serendipity than doctrine. Shortfalls in the Command and Control Tenet *robust, integration, synchronization and coordination mechanisms* created conditions more geared towards serendipity than synchronization. The following constraints in existing joint doctrine create seams, thereby preventing synergy:³

- Focus on air interdiction planning and execution processes creates a myopic and constrained view of joint interdiction operations
- Assumption of air interdiction in support of surface maneuver; as such, doctrine lacks comparable planning and execution processes for all interdiction and maneuver assets

³ For more detailed background on current synchronization of interdiction and maneuver doctrine reference Appendix C.

- Concept of synchronization encourages disparate organizations and processes that fall short of future Joint Force integration

The future Joint Force will not be adaptable or integrated without adding several *robust integration, synchronization and coordination mechanisms* to address these existing joint doctrine issues. Incorporating concepts already proposed by this paper, this chapter recommends a new joint organization to fully integrate interdiction and maneuver in future joint operations.

Synchronization Challenges in Recent Joint Operations

Contingency operations of the recent past validate synchronization of interdiction and maneuver as a viable concept applicable to the future Joint Force. However, they illustrate that current doctrine processes and mindsets make synchronization more a result of serendipity than a well planned and executed joint operation.

Although it may have been considered a successful joint operation, in retrospect the “Highway of Death” in Operation DESERT STORM was more a stroke of luck than a synchronized joint effort. Throughout the operation, air support to the ground effort was a contentious issue. In fact, the Army ensured their air support displeasure received high-level attention by including comments in situation reports to that effect on two consecutive days.¹ The Marines rapid advance through Kuwait combined with VII and XVIII Corps attack from the west channeled retreating Iraqi forces up through Basra. The retreat was subject to interdiction attacks from coalition airpower, but an improper placement of the fire support coordination line (FSCL) hampered the interdiction effort. The debate between air and land forces about FSCL placement and interdiction support indicates that synchronized maneuver and interdiction was not by design. After the war,

General Schwarzkopf stated he knew little about the FSCL debate.² Had the “Highway of Death” been planned as a joint mission, the Joint Force Commander would have been aware of and resolved the FSCL issue.

Bearing resemblance to future joint operations, Operation ENDURING FREEDOM was a noncontiguous and dispersed operation devoid of traditional boundaries and areas of operations. In the opening months of the operation, there was not an area of operation or joint special operations area assigned to any element of the joint force below the combatant commander.³ The lack of an area of operations, unclear command relationships and the unprecedented air and special operation forces (SOF) combination complicated efforts to synchronize interdiction and maneuver.⁴ During this conflict, SOF personnel with their Northern Alliance partners were a maneuver force that required joint fire support akin to a conventional force. As a defacto ground commander, the SOF component lacked expertise in the joint targeting process and did not possess a robust air support organization to execute the operation.⁵ Even if the expertise and resources had been available, the joint fire support was not easily characterized into the traditional joint fires mission areas. The majority of joint fires provided by the air component were neither close air support nor air interdiction as defined in joint doctrine, but somewhere in between. Using SOF personnel as sensors, the air component generated sorties without designating specific targets. SOF personnel, not in direct contact with enemy forces, provided mensurated targeting data to the arriving aircraft.⁶ This ground directed interdiction concept combined with indigenous force maneuver proved successful, but the success could be attributed more to “field solutions” than to execution of existing doctrine concepts.

Operation IRAQI FREEDOM demonstrated the most integrated joint operations seen to date with the air war designed to stay very tightly lashed to the ground campaign.⁷ Despite the campaign design, synchronization of interdiction and maneuver again seemed the result of serendipity. During the last week of March 2003, ground forces having progressed to just south of the Karbala Gap were coming to grips with the logistic problems generated by their rapid advance.⁸ A blinding sandstorm coincided with the requirement to regroup and refit prior to the push towards Baghdad. The apparent operational pause was not a pause at all. Although ground maneuver had stopped, interdiction from the air component kept pressure on the Iraqi resistance. Believing they could use the sandstorm as cover, Iraqi forces massed and moved south towards the battle line subjecting themselves to detection by coalition reconnaissance and destruction by precision munitions.⁹ The sandstorm and lack of coalition ground maneuver enticed an Iraqi reaction, resulting in engagement by another element of the joint force—airpower. On the surface, this appears to be an excellent example of synchronized interdiction and maneuver, but closer examination illustrates this was more a result of circumstance than design.

Moving Towards Integration: Proposals to Satisfy the Demands of the JOpsC

Although the previous examples are not synchronized interdiction and maneuver in the purest sense, they do demonstrate how recent operations have outpaced current joint doctrine. Joint Publication 3-0 states that all levels of war require agility and versatility of thought, plans, operations and organizations.¹⁰ With this statement in mind, the

following paragraphs propose changes to joint doctrine to ensure attributes of the future Joint Force can be realized.

Synchronization as a goal—military actions arranged in time, space and purpose—falls short of describing the full Joint Force integration desired by the *JOpsC*.¹¹ Joint Publication 1-02 defines integration as the arrangement of military forces and their actions to create a force that operates engaging as a whole.¹² For a joint force to execute interdiction and maneuver as a whole effectively serendipity will have to be replaced by defined planning and execution processes in joint doctrine. The first recommendation is to change “synchronization of interdiction and maneuver” to “integration of interdiction and maneuver.” This change would better emphasize that interdiction and maneuver should not be considered separate operations against a common enemy, but rather complementary operations designed to achieve the JFC’s campaign objectives.¹³

This paper proposes integration of interdiction and maneuver be considered a *joint tactical action*, bringing together the best mix of capabilities to achieve a desired effect. As currently written, joint doctrine does not facilitate executing integrated interdiction and maneuver as a joint tactical action. To include those already recommended in this paper, several new joint doctrine concepts are required to allow seamless integration of interdiction and maneuver. Consider the following scenario.

During a contingency operation, a joint force commander determines that a joint tactical action is required to achieve a specific objective or effect. To execute the joint tactical action, the joint force commander designates one of his functional commanders as the supported commander and assigns an area of operations. Within the area of operations, the supported commander is responsible for the integration all effects—

interdiction, maneuver, etc. To ensure the joint force achieves a common understanding of the desired effects, an establishing directive is published to communicate commander's intent and mission-type orders to all elements of the joint force participating in the joint tactical action. This establishing directive, a common format operation plan and/or order, also identifies situations where the main effort might shift between elements of the joint force requiring a battle handover.

To execute the joint tactical action, the supported commander requires expanded apportionment and tasking mechanisms similar to those in current joint doctrine. A framework currently exists for supported surface commanders requesting non-organic interdiction from the air component. Upon receipt of the request, the JFACC melds the theater-wide and supported commander's interdiction priorities into an apportionment recommendation to the JFC. Once approved, the air apportionment recommendation is translated into an air tasking order for execution. For future operations, this paper recommends supported commanders—air, land, maritime or special operations—use a prioritized effects list to request non-organic interdiction and maneuver capabilities from supporting commanders. Associating the listed prioritized effects with an element of the joint force would, in effect, be an apportionment recommendation to the JFC. The apportionment recommendation is put into execution by publishing an effects tasking order.

To make this scenario a reality, the future Joint Force requires established organizational structures and processes, allowing commanders at all levels to collaborate in bringing the appropriate joint capability to bear at the right place and time. Current joint doctrine states that interdiction-capable commanders require access to command and

control systems to take advantage of real-time and near-real time intelligence.¹⁴ Targeting and apportionment processes are fairly well established for interdiction support of maneuver. The same requirements are probably valid for maneuver-capable commanders, but are missing in joint doctrine. The command and control systems and processes currently available that might facilitate integrated interdiction and maneuver operations tend to be domain-centric. This lack of integrated systems and processes exposes a seam inhibiting integrated joint operations.

During Operation ALLIED FORCE, for example, the air operations center lacked a strong Army intelligence presence to facilitate attacking field forces. Instead, the air component relied on information from the Army's Task Force Hawk and the construction of its own flexible targeting cell to address the issue.¹⁵ As the Air Force brings *direct attack* on line as a doctrinal mission, the challenges associated with organizing, training and exercising command and control for integrated interdiction and maneuver are highlighted.¹⁶ The article *Direct Attack: Enhancing Counterland Doctrine and Joint Air-Ground Operations* suggests that land-warfare experts be resident on the air component's staff in a formal capacity, rather than serve as members of the land component's battlefield coordination detachment.¹⁷ The article also suggests that functional command and control requirements for direct attack be executed by an organization which approximates the capabilities of an air support operations center.¹⁸ To effectively execute integrated interdiction and maneuver, this paper suggests the adoption of two new organizational concepts—component coordination element and joint tactical action support center. Similar to the 11-person air component coordination element (ACCE) used during Operation IRAQI FREEDOM, component coordination

elements (CCE) give each component headquarters senior-level air, land, maritime and special operations expertise resident and formally assigned to its staff.¹⁹ Subordinate to the supported component, a joint tactical action support center (JTASC) approximates a combined air support operations center and fire and effects coordination cell. A JTASC would have a set of core capabilities and could adapt based on the situation either by deploying additional resources or using reachback.

The previous discussion of integrated interdiction and maneuver operations addresses sustaining pressure on an adversary by employing lethal means, but has not addressed non-lethal means like information or psychological operations.²⁰ During the first week of Operation IRAQI FREEDOM, coalition forces dropped over 28 million leaflets some of which included capitulation instructions creating both positive and negative non-lethal effects.²¹ On the positive side, some Iraqi forces became prisoners of war with little resistance. On the negative side, a great many of the Iraqi force laid down their weapons and walked away from their positions.²² Had maneuver forces been present to complement this non-lethal effect, a greater number of prisoners of war may have been taken preventing forces from being available to fight another day as insurgents. Like integrated interdiction and maneuver, a JTASC can integrate non-lethal effects by having information or psychological operations capability either resident inside its organization or available via reachback.

Summary

Applying the doctrine concepts proposed thus far to the Afghanistan example discussed in this chapter may have yielded more synergy and fewer seams. Based on the objectives of attacking mobile Taliban and Al Qaeda targets, the joint force commander

would have designated a supported commander and an area of operations to conduct the mission. Since there was no surface area of operations, one could argue that the air component could have been made the supported commander since he owned the bulk of the firepower and command and control assets.²³ The air component commander would have published commander's intent and mission-type orders for the involved joint forces in an operation plan and/or order. The document would identify events and times when the main effort might shift between the air and SOF components effecting a joint battle handover. Both the air and special operations component would have had component coordination elements facilitating real-time joint decisions in planning and execution. The air component would have generated a prioritized effects list with an apportionment recommendation and published an effects tasking order for execution. A joint tactical action support center would have deployed to integrate the mix of joint capabilities available for the operation's execution. The proposed doctrine concepts would have ensured interdiction and maneuver operations and processes were integrated from the initial stages of planning to the final stages of execution. Serendipitous integration is not objectionable since the future Joint Force is expected to be adaptable able to react as the situation dictates. However, serendipitous integration of interdiction and maneuver should be the exception, not the norm.

Changing synchronization to integration, adding prioritized effects lists and effects tasking orders, standing up component coordination elements, and establishing joint tactical action support centers can facilitate successful future Joint Force operations. The turf battles, confusion, lack of deployed capability and reactive operations experienced in the examples discussed will likely decrease and be replaced by well

planned, coordinated and executed integrated joint operations. If nothing else, adoption of the proposed concepts allows the future Joint Force to more readily respond to emerging integration opportunities during the course of a conflict. It is worth noting the *Force Application Functional Concept* takes strides towards the proposed concepts in this chapter. The document defines *force application* as the integrated use of maneuver and engagement to create the effects necessary to achieve assigned mission objectives.²⁴

Notes

¹ Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The Inside Story of the Conflict in the Gulf* (Boston, Mass.: Little, Brown and Company, 1995), 330.

² Ibid, 413.

³ Colonel Mike Findlay, USA, Lieutenant Colonel Robert Green, USA, and Major Eric Braganca, USA, "Fires and Maneuver – Challenges on the Noncontiguous Battlefield," *The Air Land Sea Bulletin*, Issue 2003-1, (March 2002): 18-19.

⁴ Ibid, 19. Since there was not a surface area of operation with a traditional supported/supporting, one might assume that the air component commander was the supported commander. Similarly, the JSOTF-North was seen as the de facto ground commander conducting maneuver and requiring interdiction support since it was designated the main effort. This designation, however, was not a command relationship to make the JSOTF a supported commander.

⁵ Ibid, 20-22.

⁶ Ibid, 20-21.

⁷ Bradley Graham and Vernon Loeb, "An Air War of Might, Coordination and Risks," *Washington Post*, 27 April 2003, A1, on-line, Internet, 29 January 2004, available from <http://www.washingtonpost.com/ac2/wp-dyn?pagename=article&node=&contented=A42694-2003Apr26¬Found=true>.

⁸ Williamson Murray and Robert H. Scales, Jr., *The Iraq War: A Military History* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 2003), 196.

⁹ Graham, A1.

Dr. Rebecca Grant, *Gulf War II: Air and Space Power Led the Way*, An Air Force Association Special Report (Arlington, Va.: Aerospace Education Foundation, 2003), 21.

¹⁰ Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, IV-10.

¹¹ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 14. The *JOpsC* states that the Joint Force must move beyond deconfliction to fully integrated elements with all functions and capabilities focused toward a unified purpose.

¹² Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 261.

¹³ Joint Publication 3-0, IV-14.

¹⁴ Ibid, IV13.

Notes

¹⁵ Lieutenant Colonel Phil M. Haun, "Airpower versus a Fielded Army: A Construct for Air Operations in the Twenty-First Century," *Aerospace Power Journal* XV, No. 4 (Winter 2001): 84, on-line, Internet, 17 October 2003, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj01/win01/haun.html>.

¹⁶ Major General David Deptula, Colonel Gary L. Crowder, and Major George L. Stamper, Jr., "Direct Attack: Enhancing Counterland Doctrine and Joint Air-Ground Operations," *Air & Space Power Journal* XVII, No. 4 (Winter 2003): 8, on-line, Internet, 3 December 2003, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/win03/deptula.html>. Direct attack is being introduced as a counterland-apportionable mission category to complement close air support and interdiction. The working definition for direct attack is air operations conducted to render the adversary's military capabilities ineffective outside an established land area of operations or when surface forces are operating in a supporting role to air forces.

¹⁷ Ibid, 11. A battlefield coordination detachment is an Army liaison provided by the Army component or force commander to the air operations center (AOC) and/or to the component designated by the joint force commander to plan, coordinate, and deconflict air operations. The battlefield coordination detachment processes Army requests for air support, monitors and interprets the land battle situation for the AOC, and provides the necessary interface for exchange of current intelligence and operational data.

¹⁸ Ibid, 11-12. An air support operations center is the principal air control agency of the theater air control system responsible for the direction and control of air operations directly supporting the ground combat element. It processes and coordinates requests for immediate air support and coordinates air missions requiring integration with other supporting arms and ground forces. It normally collocates with the Army tactical headquarters senior fire support coordination center within the ground combat element.

¹⁹ Elaine M. Grossman, "Iraq War Could Feature Unprecedented Air-Land Collaboration," *Inside the Pentagon*, 13 February 2003, 1, on-line, Internet, 10 December 2003, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=PENTAGON-19-7-1.

²⁰ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 12-13. In accordance with the *JOpsC*, the future Joint Force should have the capability to create and sustain continuous pressure throughout the battlespace and disintegrate, disorient, dislocate or destroy any opponent with a combination of lethal and non-lethal means.

²¹ "CENTCOM Operation Iraqi Freedom Briefing ~ 24 March 2003," 24 March 2003, n.p., on-line, Internet, 20 November 2003, available from http://www.centcom.mil/CENTCOMNews/transcripts/transcript_list.htm.

²² Ibid.

²³ Findlay, 19.

²⁴ Department of Defense, *Force Application Functional Concept* (Washington, D.C.: Force Application Assessment Division, Joint Staff J-8, February 2004), 4. This concept recognizes that we have moved beyond the current doctrinal definitions of fires and engagement.

Chapter 6

Joint Fires Concepts

If as one people speaking the same language they have begun to do this, then nothing they plan to do will be impossible for them. Come, let us go down and confuse their language so they will not understand each other.

Biblical Story of the Tower of Babel
Genesis 11:6-7

Joint fires and joint fires support enabled recent operations in Afghanistan and Iraq to reach new heights of combat effectiveness, but fell short of their potential since they were not grounded in the Command and Control Tenet *responsive, interoperable support systems*. Outdated mindsets and doctrinal processes impacted the joint force's ability to be "fully integrated." Until the following issues are addressed, a future Joint Force with a pervasive "joint team mindset" will remain a concept and not become a reality.⁴¹

- Command and control of joint fires is focused on *air-delivered fires* and is primarily close air support-centric
- Command and control of joint fires is challenging due to five disparate and complex service-specific structures that lack commonality, compatibility and standardization of capabilities
 - Command relationships determine which of the five systems will be employed to support an operation
 - Without an established command relationship, each component uses its own command and control system
 - Doctrinal associations and domain-centric orientation inhibits integrated joint operations
- Joint fires concepts are constrained by two-service mindset, thereby hampering integration of effects under a joint force commander

To address these issues and propose changes, this chapter reviews examples from recent contingencies that illustrate the doctrine gaps in joint fires. By chapter's end, a new organizational construct is recommended creating a joint team mindset with *responsive, interoperable support systems* for joint fires employment.²

Joint Fires Support Challenges

Joint fires support during recent operations in Afghanistan and Iraq often did not have linking support systems that possess commonality, compatibility, and standardization to the greatest extent possible.³ The Operation ENDURING FREEDOM example discussed in Chapter 5 highlights some of the issues associated with joint fires support. The operation executed non-doctrinal fire missions and due to rigid doctrinal relationships the joint force did not have adequate planning and execution expertise deployed to theater.

Even with the entire command and control system deployed for operations in Iraq, the existing systems and processes did not adequately provide for effective communications within the air component or between components early in the conflict.⁴ In fact, many of the interfaces to support joint fires were unwieldy, ineffective and inefficient.⁵ A number of command and control systems were employed and each provided different information in a variety of formats requiring personnel to be proficient on several interrelated and partially redundant systems.⁶ Due to the lack of standardization and compatibility, standard operating procedures were developed to decrease the chances of error resulting from the manual transfer of data between systems.

⁴ For more detailed background on current joint fires doctrine reference Appendix D.

With the multitude of systems and differing formats, most headquarters defaulted to using Microsoft Office applications and chat rooms to more effectively create decision tools and communicate ideas.⁷ Information system incompatibility was just as challenging at the tactical level requiring ground commanders monitor up to 12 different and incompatible information systems to execute fire support.⁸

Joint doctrine and the scheme of maneuver in OIF led to several disparate joint fires support networks executing the same functions (Figure 2). The execution differed between support networks and was not necessarily joint. Within their respective areas of operations, the Army and Marines had their own habitually associated and Service-specific air support centers. In contrast, the SOF task forces had a joint air control element (JACE) to provide joint fires support. The Air Force provided two air support operations centers (ASOC) to support V Corps operations, the main in Kuwait and one roughly half the size forward deployed.⁹ Traditionally separated by other staff functions, the ASOC and V Corps Fire and Effects Coordination Cell (FECC) were collocated during OIF to better handle the rapidly changing situation.¹⁰ V Corps lessons learned recommended continued placement of the ASOC immediately next to the FECC in future operations.¹¹ In the Marine area, there were a total of four Marine direct air support centers (DASC), three surface-based and one airborne, supporting Marine and coalition forces.¹² All of these organizations and platforms served the same functions, but their air-ground relationships and execution philosophies were not necessarily the same.¹³

As Figure 2 illustrates, each of the air support organizations is associated with a senior level ground element. The difference in command channels sometimes requires liaisons to get the job done, not always in the most efficient manner. For example, a

Marine liaison was placed on the AWACS to conduct real-time battle management of joint fires air assets.¹⁴ Though liaison officer proved to be an effective asset, it took several weeks before this ad hoc arrangement realized its full utility.¹⁵

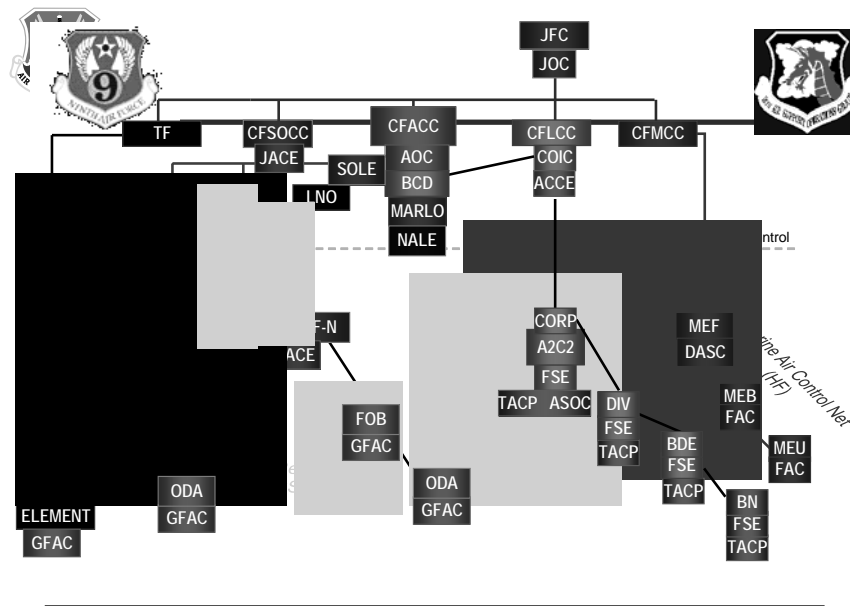


Figure 2 Operation IRAQI FREEDOM Joint Fires Support Network¹⁶

Due to information system compatibility issues and inability of some systems to operate on the move, the 3rd Infantry Division (Mechanized) (3ID(M)) also relied on Marine liaison officers using Iridium phone communications to conduct cross-boundary fires. The lack of common communications capabilities made the clearance of these fires extremely slow.¹⁷

The uncoordinated employment of Army Tactical Missile Systems (ATACMS) during OIF illustrates the lack of a surface-based fires support structure that compares with that for air-delivered fires. V Corps forces fired three ATACMS and for a variety of reasons adequate coordination was not completed with the air component to clear the airspace.¹⁸ Although the three events may not be considered joint fires per current joint

doctrine, they illustrate that air and land fires are not integrated at the lowest level. Established procedures required V Corps to coordinate airspace deconfliction for long-range ATACMS shots up through the land component commander who in turn would coordinate with the air component.¹⁹ It is not clear what role the ASOC played in the coordination, but the established processes and dual command chains probably did not result in seamless coordination. Although Service-specific structures and processes have the same functional responsibilities, the combination of capability gaps, doctrinal associations and domain-specific orientation limits the flexibility of joint force commanders to create an integrated joint fires support network.

Terminal Control Challenges

Army lessons learned recognized that the integration and relationships between fire support elements and terminal air control parties greatly improved timely and responsive joint fires.²⁰ However, terminal control during operations in Afghanistan and Iraq was not without issues.

Dispersed and highly mobile operations in Afghanistan and Iraq highlighted limitations in communications capabilities and terminal control asset density. During OIF, the Air Force established the 484th Air Expeditionary Wing which focused on the Tactical Air Control System and air-ground operations. Instead of using standard formulas to place tactical air control parties (TACP), the wing proactively placed and assigned TACPs based on mission and/or unit requirements.²¹ Despite these efforts, the 3ID(M) still felt they had a shortage of enlisted terminal attack controllers (ETAC) to control the amount of airpower available.²² There was a robust package of ETACs at the brigade and battalion levels, but not sufficient numbers available to the lower elements of

the ground force.²³ It was concluded within Army channels that company-level Fire Support Teams (FIST) require training as universal observers capable of not only supporting indirect (Type 2 or 3) close air support (CAS) control, but also support all means of joint fires.²⁴

Fire control was also hampered by incompatible equipment and the inability to communicate over dispersed distances or on the move. During Operation ANACONDA, fire supporters did not have equipment that allowed them to communicate with all delivery platforms.²⁵ During OIF, the 20-25 kilometer range radios typically used for fire support were not capable of supporting brigade combat teams separated by up to 270 kilometers. Additionally, the inability to conduct communications on the move contributed to decreases in joint fires situational awareness and effectiveness.²⁶ Even with reliable communications, CAS employment was degraded and at times dangerous due to non-doctrinal terminology and procedures being used.²⁷ The non-doctrinal employment of CAS assets can likely be attributed to a joint fire support qualification standard not existing. Prior to adding the joint terminal attack controller (JTAC) definition in joint doctrine in September 2003, there were four different terminal control qualification standards, none of them universally recognized across the joint community.²⁸ Despite communications issues and their perceived limited numbers, the ETACs and JTACs deployed for Operation IRAQI FREEDOM executed superbly. Pilots on CAS missions did not have trouble talking to the ETACs and JTACs, rather the communication issues were a matter of control agencies not being similarly configured.²⁹

Propositions for Responsive and Interoperable Joint Fire Support

Joint warfare is team warfare where effectively integrated joint forces expose no weak points or seams to an adversary.³⁰ To execute “team warfare,” joint force commanders may choose to employ capabilities from any Service or component that is part of the joint team.³¹ An integrated joint force concept approaches a stage where the two-service requirement to consider a function or operation joint may be obsolete. A joint force might still be a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander.³² This paper proposes that the operative words defining an entity joint move from “two service” to “operating under a single joint force commander.” In simple terms, fires supporting the joint objectives of a joint force commander are joint fires. This change in thinking dictates changes in command and support relationships and processes.

Considering all fires as joint fires does not discount the fact that a Service or component has a requirement to maintain certain joint fires capability to support its assigned task(s). Services or components may follow the Marine Air Ground Task Force model making excess joint fires capabilities available to a joint force commander for tasking.

The Marine Air Ground Task Force (MAGTF) commander will retain OPCON of organic air assets. During joint operations, the MAGTF air assets will normally be in support of the MAGTF mission. The MAGTF commander will make sorties available to the JFC, for tasking through the JFACC, for air defense, long-range interdiction and long-range reconnaissance. Sorties in excess of MAGTF direct support requirements will be provided to the JFC for tasking through the JFACC for the support of other components of the joint force or joint force as a whole.³³

Using this construct for joint fires, a component commander retains control of his organic joint fires assets to support his assigned joint tasks and makes excess capability available to the JFC for tasking through the supported commander.

Making Joint Fires Organizations Joint

Reviewing current joint doctrine and the joint fires challenges from OEF and OIF highlights the fact that most joint fires support is not in fact joint and lacks interoperability. Interoperable at some levels, joint fires processes and structures require the ingenuity of outstanding personnel to create non-standardized solutions to achieve interoperability at all levels. Displaying the four elements of joint fires command and control, illustrates how far we have to go to make the future Joint Force fully integrated so that joint capabilities are organized and interdependently applied at increasingly lower echelons (Figure 3).³⁴

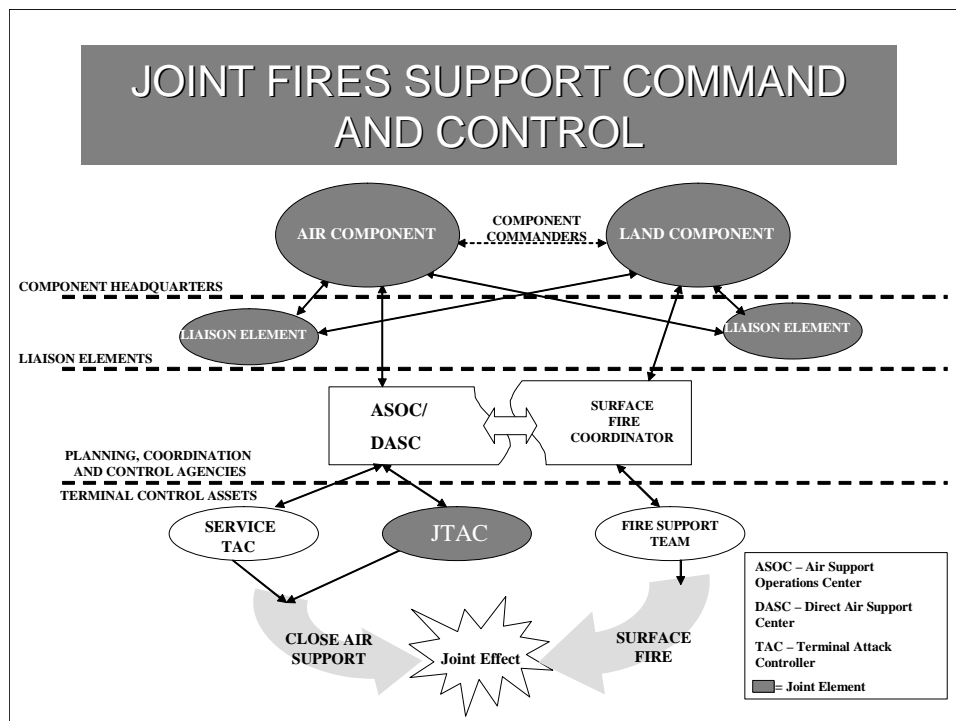


Figure 3 Joint Fires Support Command and Control

To meet the *JOpsC* objectives, joint fires structures and processes must be decentralized and leverage the power of integrated joint capabilities while operating in a joint manner at lower echelons.³⁵ To facilitate achieving these goals, this paper recommends adopting a joint fires structure similar to the one shown in Figure 4.

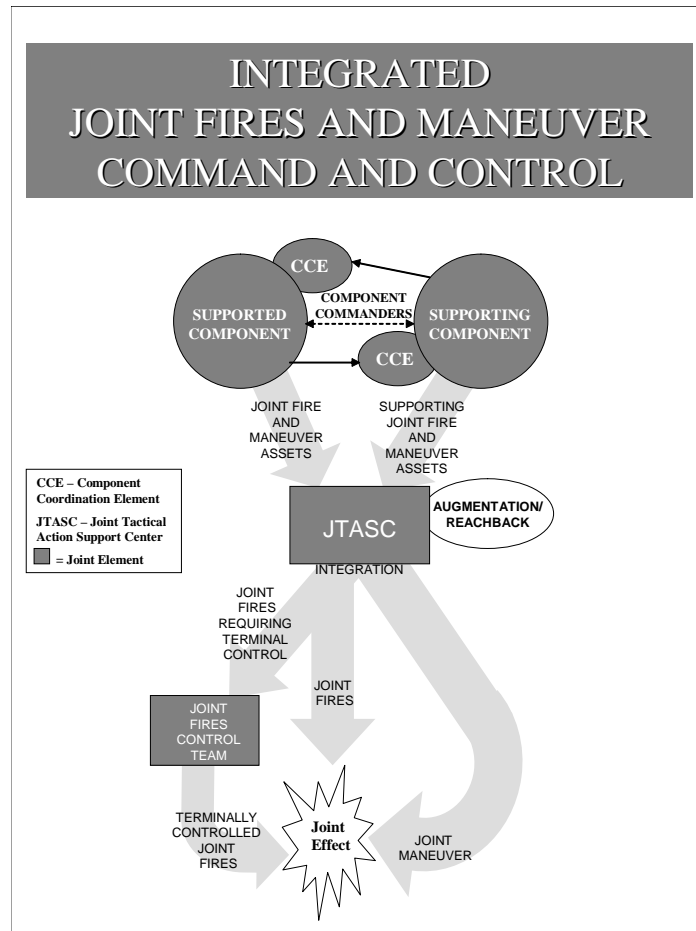


Figure 4 Integrated Joint Fires and Maneuver Command and Control

Incorporating the proposed concept from the previous chapters, a JFC uses an establishing directive to delineate command and support relationships to achieve joint objectives. Part and parcel to those objectives is joint fires execution. Every functional component has joint fires and maneuver capabilities that can be integrated with sister component joint fires and maneuver capabilities to achieve a synergistic effect. Figure 4

illustrates these capabilities creating a single joint effect. When in reality, this same construct can be duplicated numerous times in the same or another area of operations to achieve the objectives of a joint commander.

Different from past organizational constructs, each component headquarters would have component coordination elements instead of liaison officers. Similar to the successful air component coordination element (ACCE) employed in OIF, the CCE makes senior level cross-component expertise resident on sister component staffs that is capable of planning and integrating joint operations. The ACCE concept is founded, and success hangs on, representation at a level commensurate to staff principals of the host components.³⁶ The Battlefield Coordination Detachment, located at the air component headquarters, served the same role as the ACCE for the land component, but did not have the same senior-level representation.³⁷ The ACCE concept was captured in joint doctrine with its inclusion in the September 2003 approval of Joint Publication 3-09.3. However, joint doctrine limits this concept to air component support of the land component. This paper recommends formalizing the CCE concept for all components in future joint doctrine.

Perhaps the most important level of joint fires execution, the joint fires planning, coordination and control agencies are currently the least joint entity of all the joint fires command and control areas. Each of the elements at this level is either Service- or component-specific with disparate capabilities and processes preventing fully integrated, responsive and interoperable joint fires support. Chapter 5 proposed the joint tactical action support center (JTASC) as the organization to integrate interdiction and maneuver. Carrying this concept a step further, the JTASC would be the joint organization with

responsibilities to integrate joint fires (interdiction, CAS, surface fires, non-lethal, etc.) and maneuver. Instead of the ASOC and FECC just being collocated, the JTASC concept makes them a single joint entity responsible for the integration of joint fires and maneuver. Considering that a supported component commander can have several dispersed areas of operations, it is conceivable that he can have more than one JTASC under his command.

The future Joint Force would have a requisite number of JTASCs with core capabilities. Following the construct established in the *2003 Joint Close Support Action Plan*, this paper suggests developing for the JTASC a single comprehensive (battle planning through combat assessment) listing of joint essential tasks required for integrated joint fires and maneuver.³⁸ In conjunction with a list of core tasks, a list of joint interoperable communications and information systems needs to be developed. Establishment of JTASC joint essential task lists and standardized communication requirements would facilitate the development of JTASC TTPs. The goal of this initiative is two-fold: 1) make JTASC command and control of integrated joint fires and maneuver transparent regardless of which component is the supported commander, and; 2) with established standards any appropriately qualified personnel, regardless of Service, could operate in any JTASC and be effective. This approach would yield a fully integrated and adaptable joint force capable of delivering responsive and interoperable joint fires support.

Terminal control of joint fires, specifically CAS, made a move towards jointness with the establishment of joint terminal attack controllers (JTAC). Joint Publication 3-09.3 recently added the JTAC to the doctrine lexicon in September 2003.

A qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. A qualified and current joint terminal attack controller will be recognized across the Department of Defense as capable and authorized to perform terminal attack control.³⁹

Although a definition has been agreed upon, qualification and certification standards are still in development as part the *2003 Joint Close Air Support Action Plan* (the same is being done for forward air controller-airborne). Notwithstanding, the JTAC construct brings some degree of standardization to joint fires, but it shouldn't stop there.

An Army fire support coordinator from Operation ANACONDA stated, "We cannot continue to operate with add-on conglomerate of Air Force personnel, especially during combat operations. We must train and fight as a team."⁴⁰ Statements like these and lessons learned from recent operations have generated discussion within the joint community to train and equip more Airmen, Soldiers and Marines to call in airstrikes.⁴¹ There is a proposal within the Army to create joint fire control teams of multi-service troops trained to call in strikes from air, sea or ground weapons.⁴² Under this concept, Soldiers, Sailors, Airmen and Marines would be qualified to safely and accurately deliver the entire range of joint fires from mortars to airstrikes.⁴³ However, having a single individual qualified for all joint fires control may be counterproductive creating jacks of all trades, masters of none.

It takes two years to create a fully qualified terminal attack controller.⁴⁴ Terminal attack controllers are dedicated to the single, complex mission area of air-delivered joint fires and the singular focus could be considered an advantage.⁴⁵ Considering the amount of training required to be proficient in this one joint fires area, the training pipeline to create a qualified (certified) terminal controller for all joint fires may not be feasible

without lowering the standard. Due to the lethal capability of U.S. joint fires and obvious fratricide concern, lowering the standard should not be an option.

Instead of creating “mile wide, inch deep” terminal controllers capable of controlling all joint fires, the future Joint Force might be better served by a true joint fire control team. This paper proposes a joint fire control team consisting of a team of experts with each member having a unique capability to control a segment of the joint fires spectrum. A joint fire control team member would be qualified (certified) in his Service-specific skill sets and be trained and intimately familiar with other joint fires assets. Different from today’s disparate joint fires elements, terminal attack controllers and surface fire supporters would merge into a single team under this concept. For example, a two-man tactical air control party would now become a joint fire team consisting of a terminal attack controller and a fire support team member. Each has their respective expertise, but is trained to support his counterpart as the situation dictates. A real-time joint battle handover, if you will. Representing jointness at the lowest level, this example has the potential to create greater numbers of fully-capable joint fires control teams that can be dispersed throughout the battlespace.

Summary

Changing the mindset for defining entities as joint will be the first step to achieving responsive and interoperable joint fires. Secondly, adopting the component coordination elements, joint tactical action support centers and joint fire control team concepts proposed in this chapter creates a single joint fires structure to replace the five disparate structures that exist today. Combining these concepts with a list of joint essential tasks and interoperable communications and information systems facilitates achieving the rapid

information transfer and decision making that the future Joint Force requires. A more “joint” and standardized joint fires structure ensures future joint operations reach the full integration desired by the *JOpsC*.

Notes

¹ Joint Staff Directorate for Operational Plans and Joint Force Development, *An Evolving Joint Perspective: U.S. Joint Warfare and Crisis Resolution in the 21st Century White Paper*, (Washington, D.C., Joint Staff, J7: 28 January 2003), 11.

² Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, 10 July 2001, III-16.

³ *Ibid*, III-16.

⁴ Lieutenant Colonel Thomas L. Kelly and Lieutenant Colonel (Retired) John P. Andreasen, “Joint Fires: A BCD Perspective in Operation Freedom,” *Field Artillery*, November-December 2003, 21, on-line, Internet, 10 February 2004, available from <http://sill-www.army.mil/FAMAG/>.

⁵ *Ibid*, 20.

⁶ *Ibid*, 22.

⁷ *Ibid*.

⁸ “Operation Iraqi Freedom, Third Infantry Division (Mechanized), ‘Rock of the Marne’, After Action Report,” Final Draft, 12 May 2003, 12-28.

⁹ Colonel Bruce Curry, Commander, 4th Expeditionary Air Support Operations Group during Operation IRAQI FREEDOM, interviewed by author, 3 March 2004.

¹⁰ Lieutenant Colonel William L. Thomas, Jr., 4th Expeditionary Air Support Operations Group during Operation IRAQI FREEDOM, interviewed by author, 3 March 2004.

¹¹ “V Corps Field Artillery Lessons Learned from Operation IRAQI FREEDOM,” *Center for Army Lesson Learned*, no date, n.p.

¹² Marine Corps Combat Development Command Studies and Analysis Division, “Marine Aviation Weapons and Tactics Squadron One Lessons Learned,” April 2003, Issue 219.

¹³ Curry, n.p.

¹⁴ “Marine Aviation Weapons and Tactics Squadron One Lessons Learned,” Issue 68.

¹⁵ *Ibid*.

¹⁶ Lieutenant Colonel Franklin Walden and Master Sergeant Hal Sullivan, “Joint Close Air Support in Support of Operations ENDURING FREEDOM and IRAQI FREEDOM,” 18th Air Support Operations Group briefing, AFDD 2-1.3 Counterland Rewrite Conference, Langley AFB, Va., 25 June 2003, slide 10.

¹⁷ “Third Infantry Division (Mechanized) After Action Report,” 4-6.

¹⁸ Elaine M. Grossman, “Lapses in Coordinating Missile Launches Pinned on V Corps,” *Inside the Pentagon*, 19 June 2003, 1, on-line, Internet, available from <http://>

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www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=PENTAGON-19-25-2.

¹⁹ Ibid.

²⁰ “Operation Iraqi Freedom (OIF) Emerging Observations, Insights, and Lessons,” briefing, *Center for Army Lesson Learned website*, slide 19, June 2003.

“Third Infantry Division (Mechanized) After Action Report,” 14-1.

²¹ Elizabeth Rees, “Standup Of 484th AEW Proved Vital To Army, Air Force Ops Integration,” *Inside the Air Force*, 5 September 2003, 3, on-line, Internet, 5 September 2003, available from [Hhttp://www.insidedefense.com/secure/defense_docnum.asp?fH=defense_2002.ask&docnum=AIRFORCE-14-36-7](http://www.insidedefense.com/secure/defense_docnum.asp?fH=defense_2002.ask&docnum=AIRFORCE-14-36-7).

²² “Third Infantry Division (Mechanized) After Action Report,” 12-23.

²³ Ibid, 4-2.

²⁴ Ibid, 12-23. Joint Publication 3-09.3 defines Type 2 and Type 3 CAS control as follows: Type 2 control will be used when the JTAC desires control of individual attacks but assesses that either visual acquisition of the attacking aircraft or target at weapons release is not possible or when attacking aircraft are not in a position to acquire the mark/target prior to weapons release/launch. Type 3 control may be used when the tactical risk assessment indicates that CAS attacks impose low risk of fratricide. When commanders authorize Type 3 control, JTACs grant a “blanket” weapons release clearance to an aircraft or flight attacking a target or targets which meet the prescribed restrictions set by the JTAC.

²⁵ Lieutenant Colonel Christopher F. Bentley, “Afghanistan: Joint and Coalition Fire Support in Operation Anaconda,” *Field Artillery*, September-October 2002, 14, on-line, Internet, 14 August 2003, available from <http://sill-www.army.mil/FAMAG/>.

²⁶ “Third Infantry Division (Mechanized) After Action Report,” 14-4.

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“Marine Aviation Weapons and Tactics Squadron One Lessons Learned,” Issue 140.

²⁸ Major Robert G. Armfield, “Joint Terminal Attack Controller: Separating Fact From Fiction,” Research Report no. AU/ACSC/03-1257R (Maxwell AFB, Ala.: Air Command and Staff College, April 2003), 5.

²⁹ Sandra I. Erwin, “Close Air Support Tactics Sharpened in Iraq,” *National Defense Magazine*, June 2003, n.p., on-line, Internet, 13 February 2004, available from <http://www.nationaldefensemagazine.org/article.cfm?Id=1125>.

³⁰ Joint Publication 1, *Joint Warfare of the Armed Forces of the United States*, 14 November 2000, i.

³¹ Ibid.

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³⁴ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 9.

³⁵ *Ibid.*, 15.

³⁶ “Air Component Coordination Element Checklist,” (Maxwell AFB, Ala.: Headquarters, Air Force Doctrine Center, no date), 1.

³⁷ Amy Butler, “As A-10 Shines In Iraq War, Officials Look To JSF For Future CAS Role,” *Inside the Air Force*, 23 May 2003, n.p., on-line, Internet, 16 February 2004, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=AIRFORCE-14-21-7.

³⁸ *2003 Joint Close Air Support (JCAS) Action Plan*, (Norfolk, Va.: U.S. Joint Forces Command, 1 August 2003), 1.

³⁹ Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, 3 September 2003, GL-12.

⁴⁰ Bentley, 14.

⁴¹ Bruce Rolfsen, “On Time And On Target,” *Air Force Times*, 1 December 2003, 14.

⁴² Elaine M. Grossman, “Army Eyes ‘Joint Fire Control Teams’ to ‘Enable’ Lighter Ground Troops,” *Inside the Pentagon*, 29 January 2004, 1, on-line, Internet, 29 January 2004, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=PENTAGON-20-5-1.

⁴³ *Ibid.*

⁴⁴ Bruce D. Callander, “Controllers,” *Air Force Magazine* 86, no. 9 (September 2003), 55-56, on-line, Internet, 12 February 2004, available from <http://www.afa.org/magazine/sept2003/0903controller.pdf>.

⁴⁵ Grossman, “Joint Fire Control Teams,” 1.

Chapter 7

Fire Support Coordination Measures

On the battlefield of the future, enemy forces will be located, tracked and targeted almost instantaneously through the use of data-links, computer-assisted intelligence evaluation and automated fire control. With first-round kill probabilities approaching certainty, and with surveillance devices that can continuously track the enemy, the need for large forces to fix the opposition physically will be less important.

I see battlefields that are under 24-hour real or near-real time surveillance of all types. I see battlefields on which we can destroy anything we can locate through instant communications and almost instantaneous application of highly lethal firepower.

General William C. Westmoreland, US Army Chief of Staff
Speech to the Association of the US Army, 14 October 1969

Successful execution of fire support coordination measures is reliant upon two Command and Control Tenets, *robust integration, synchronization and coordination mechanisms* and *timely decisionmaking*. Recent fast paced and dispersed operations have demonstrated fire support coordination measure gaps related to these tenets that detract from joint operations synergy. This is not to say joint forces did not do an outstanding job in Afghanistan and Iraq. Their job was just made more difficult by several issues that hamper coordination measure responsiveness.⁵

- Differing perspectives on employment of permissive fire support coordination measures, particularly fire support coordination lines and kill boxes

⁵ For more detailed background on current fire support coordination measure doctrine reference Appendix E.

- Kill box concept and area reference systems not well understood and codified in joint doctrine
- Common grid reference systems lack standardization and fail to adequately address the airspace above the grid system
- Current fire support coordination measure constructs lack flexibility and responsiveness required to support rapidly executed, dispersed operations

The goal by the end of this chapter is to recommend a fire support coordination measures model that provides the future Joint Force with *robust integration, synchronization and coordination mechanisms* to facilitate *timely decisionmaking* during rapidly executed and dispersed operations.

Seams in Fire Support Coordination Measures

Operation ENDURING FREEDOM provided a glimpse into the future of dispersed and noncontiguous operations. Instead of using doctrinally permissive fire support coordination measures (FSCM) like a fire support coordination line (FSCL), the majority of the measures were restrictive due to the noncontiguous environment and multiple organizations involved in the operation.¹ This translated into more than 200 restrictive FSCMs during the Operation ANACONDA timeframe making coordination measure management a full time job for fire supporters—a challenge likely complicated by not having the full array of command and control assets and processes in place during the operation (Figure 5).² Additionally, permissive special engagement zones (SEZ) were established, which, essentially created free-fire areas along known and suspected infiltration and exfiltration routes to facilitate interdiction operations.³ During the course of OEF, coordination measures evolved to a system of kill boxes and fires clearance procedures to more effectively support operations.⁴

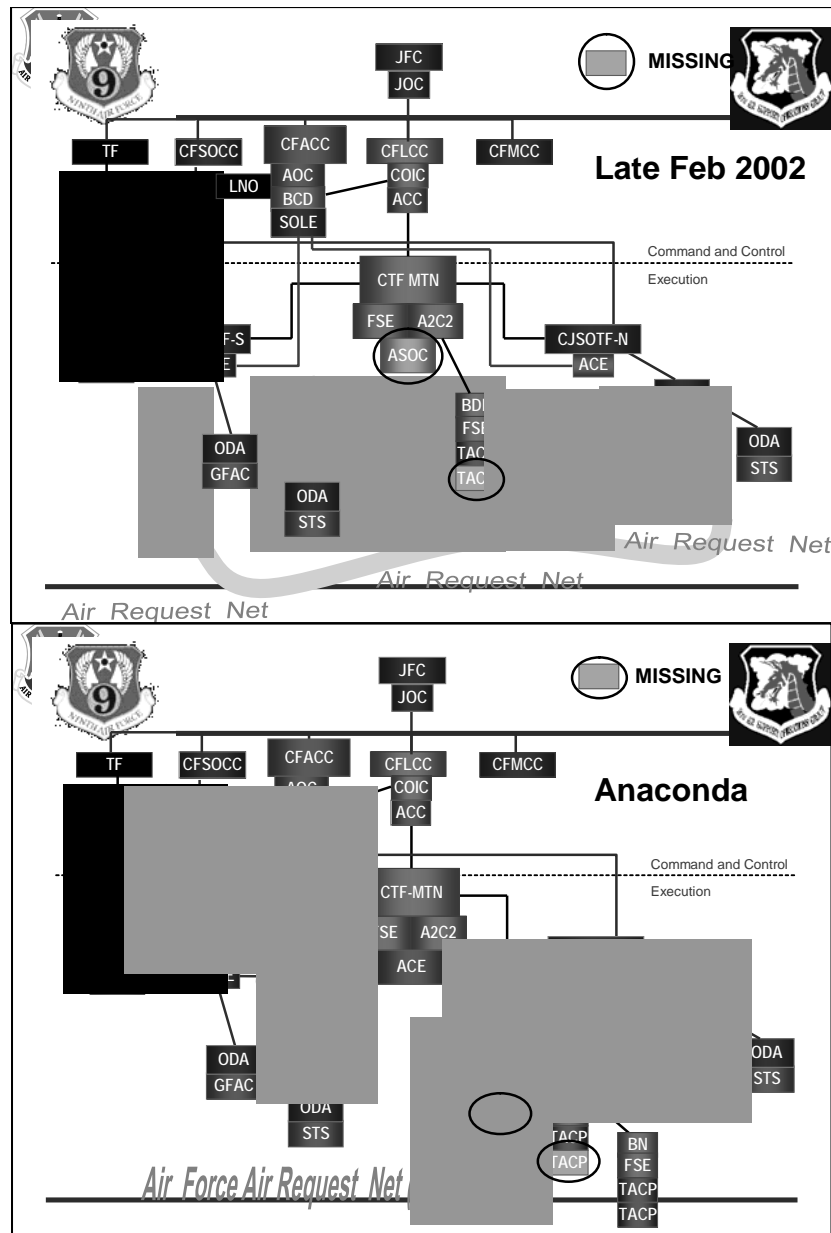


Figure 5 Operation ENDURING FREEDOM Command and Control⁵

During the initial phases of Operation IRAQI FREEDOM, the FSCL was placed 100 km or more beyond the forward edge of the battle area.⁶ This was well beyond the doctrinal placement of 30-40 km—the maximum range of division-level organic fires.⁷ Some argued that the FSCL placement created a command and control burden on getting joint fires on target in an expeditious manner.⁸ The combination of rapid advance and

extended coordination time required to move the FSCL are likely reasons for its extended placement. The FSCL movement times were coordinated with and published in the air tasking order resulting in a coordination measure that was not always responsive to the ground scheme of maneuver. Twice during OIF, the lead brigade combat teams of the 3ID(M) were on the verge of crossing the FSCL.⁹ Considering the 3ID(M) traveled 350 kms in 48 hours, a doctrinal placement and movement (six hours coordination) of the FSCL would not have been possible.

The kill box concept was employed to alleviate some of the FSCL issues, but was also deemed unsuccessful in some cases. The inability to rapidly update target information and to close kill boxes as friendly forces approached or the fact that the concept is not well understood in joint doctrine were just a few of the stumbling blocks.¹⁰ Several work-arounds were employed to include battlefield coordination lines (BCL) or similar measures, but in all cases joint operations were deemed more restrictive than permissive, particularly in the V Corps area of operations.¹¹ Despite all these challenges, FSCL placement and kill box employment became more effective and efficient as the operation progressed.¹²

Future Fire Support Coordination Measures Assumptions

Without going into specific material solutions for interoperable communications, the future Joint Force will require a network of information systems that will maximize machine-to-machine interface. This capability assists in the movement of targeting and coordination information throughout a joint force in a timely manner. Ideally, the capability to disseminate and display FSCMs digitally changes the hours of coordination time to several minutes. Assuming that the command and control structures, processes

and information systems are in place, the remainder of this chapter focuses on developing a responsive FSCM system.

Adopting a Construct for Future Coordination Measures Development

The FSCL is not a dead concept, but with the fast paced and dispersed operations envisioned by the *JOpsC* the FSCL concept may not be applicable in all future joint operations. Certainly, six hours of coordination time is no longer an acceptable standard. The first step in developing a future FSCM system conducive to nonlinear and noncontiguous operations is to look at how area reference systems might be used.

Since an area reference system is a three-dimensional reference, it can be a useful tool for creating coordination measures; however, it must be standardized. Joint Publication 3-60, *Joint Doctrine for Targeting*, leaves the standardization to each theater, which equates to no standard for an expeditionary joint force. Combined Forces Command, Korea, European Command and Central Command all use a common grid reference system (CGRS) or a common geographic reference system, but each uses a different numbering and sub-division convention for its respective theater.¹³ Additionally, when kill boxes are established, the theaters use different terminology to designate kill box status. This creates a condition where joint force units and information systems must be capable of employing three different systems for no apparent operational reason—a detriment to expeditionary operations.

To date, established and proposed CGRSs have focused on two-dimensional numbering conventions. Modeled after the battlefield coordination line/airspace control area construct, this paper recommends developing a three-dimensional numbering convention to subdivide the airspace above the surface grid. For example, the airspace

above the surface grid or z-axis could be divided in 5,000-foot increments that can be combined to rapidly create coordination measures. Similar to an airspace coordination area, the dividing line for the z-axis is based on threat avoidance, aircraft ordnance release altitudes and artillery trajectories. It is conceivable that a standardized z-axis dividing line or base altitude can be established that accounts for the majority of the friendly and adversary weapons systems. This is not to say that one size fits all, but one size fits most. An outcome of a standardized base altitude is that it establishes an expectation for the expeditionary future Joint Force. A joint force can deploy to any theater and not only expect the same numbering convention for the surface grid system, but also standard altitudes for the z-axis. Additionally, it establishes a standard that can be used in training, irrespective of the theater to which the joint force might be deployed. This paper proposes a numbering convention that not only includes the grid square, but also the altitude division for the z-axis. The kill box example in Figure 6 is based on a three-dimensional common grid reference system using a 15,000' base altitude over flat terrain.

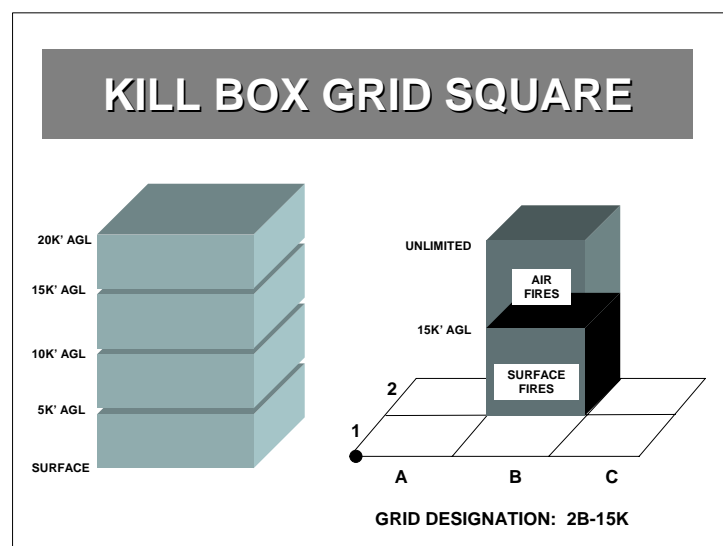


Figure 6 Kill Box Grid Square

Fire Support Coordination Area

Although the FSCL is not a measure of the past, nonlinear and noncontiguous operations may not be conducive to having a line defining the boundaries for fire control. The FSCL can be curved or enclosed, but the word “line” does not imply an enclosed FSCM. Instead, it implies a division of the battlespace into forward and rear areas that have distinct differences in fire support coordination. During nonlinear and noncontiguous operations, the differences between forward and rear areas are less distinct and a simple line cannot be used to divide the battlespace (Figure 7).

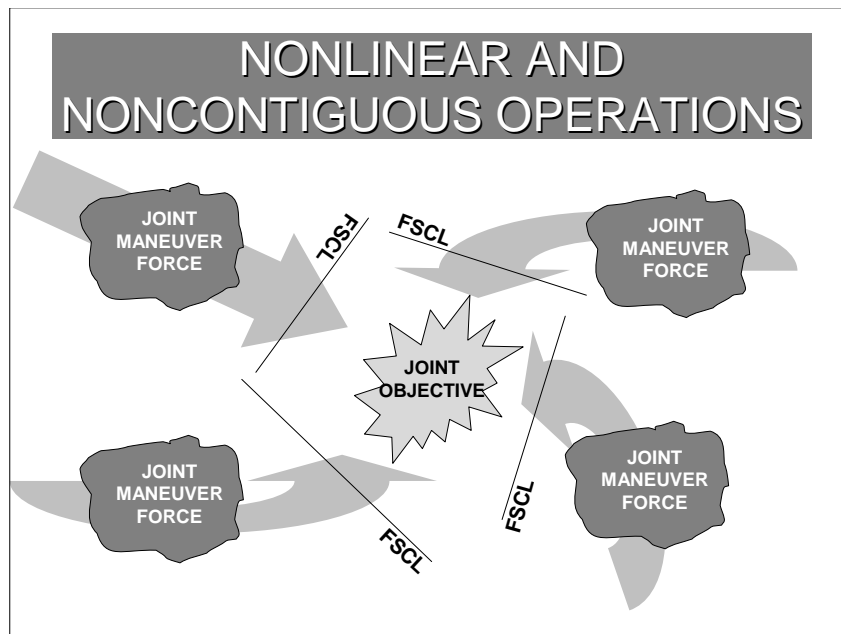


Figure 7 FSCL Placement in Nonlinear and Noncontiguous Operations

To account for nonlinear and noncontiguous operations, this paper suggests adding the fire support coordination area (FSCA) concept to joint doctrine. An FSCA serves the same purpose of an FSCL, but avoids additional and unnecessary coordination in areas where pockets of adversary resistance have been bypassed or sandwiched by friendly forces. The previously proposed three-dimensional CGRS is used to define the lateral and vertical limits of the FSCA and associated kill boxes. In simple terms, there would

be four three-dimensional coordination measures in effect for the future Joint Force—no-fire area, restrictive fire area, fire support coordination area and free-fire area. The no-fire areas would be placed over friendly force locations and be encircled by a FSCA. Outside the FSCA, an area of open kill boxes would exist where joint fires can shape the fight for a surface force in accordance with the commander's intent and mission-type orders. The definitions for the no-fire area, restrictive fire area and free-fire area currently found in joint doctrine would not require change. What would change is how they are employed and displayed in joint doctrine (Figure 8).

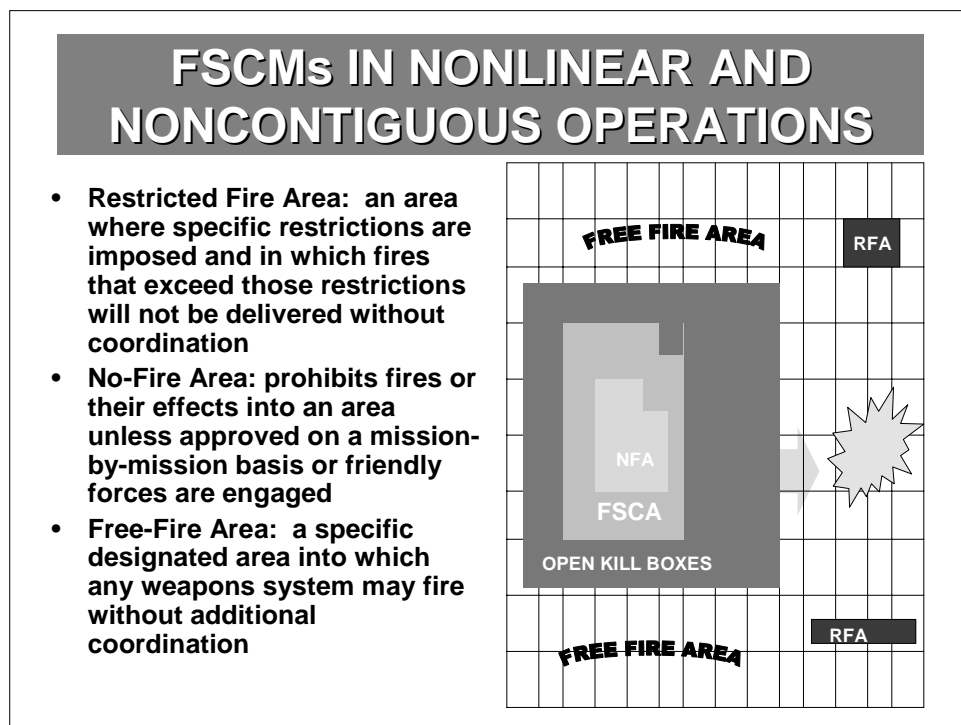


Figure 8 FSCMs in Nonlinear and Noncontiguous Operations

A review of operations in Afghanistan highlighted that decision time has become the long pole in the tent, an issue rooted in command authorities.¹⁴ This paper recommends combining a standardized three-dimensional CGRS with FSCMs based on valid assumptions to decrease the decision and coordination times for joint fires and maneuver

integration. To do so, real-time digital tracking of friendly forces and digital dissemination and display of FSCMs throughout the future Joint Force are requirements. Using agreed upon doctrinal assumptions in the development of digital FSCMs would move commanders and staffs from active participation to oversight of the FSCM process. For example, digitally tracked friendly forces would be covered by a no-fire area and encircled by a fire support coordination area defined by the doctrinal limits of its organic fires. As the friendly force maneuvered, the no-fire area and fire support area would reshape to accommodate the fire support requirements of the surface maneuver force. In real-time, the status of the appropriate grid squares would be digitally transmitted and displayed so that joint fires and maneuver could be rapidly integrated to achieve the desired effects. At all times, the supported commander would have the ability to adjust or override the organic fires buffer to match his concept of operations. Depending on the situation, the supported commander could also delegate this authority to a supporting commander, the JTASC or a subordinate commander. This same concept can be employed in linear operations. As the friendly force moves forward, the buffer advances and the status of the grids change appropriately. In effect, the forward trace of the grids defining the extent of the buffer zone would be the FSCL (Figure 9).

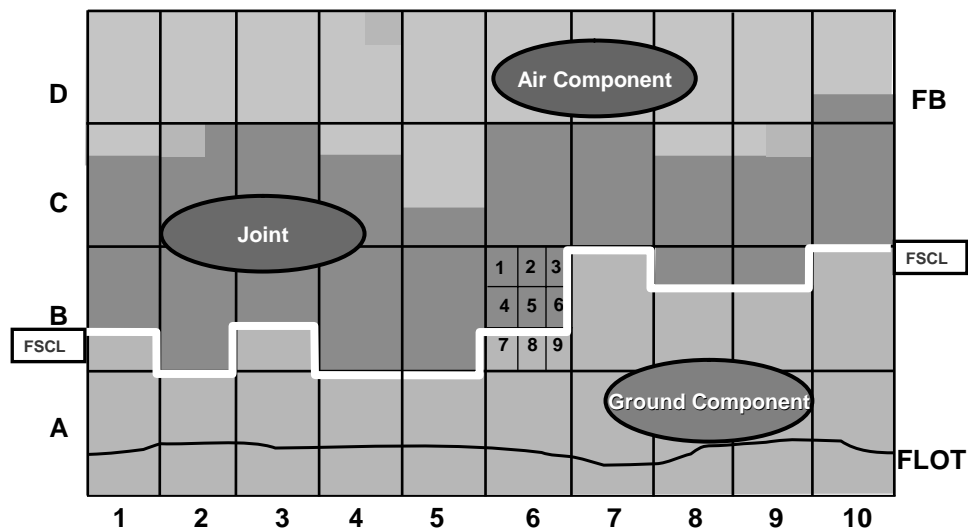


Figure 9 Forward Trace Fire Support Coordination Line¹⁵

Summary

A standardized three-dimensional common grid reference system combined with digital capabilities and doctrine concepts introduced earlier could have decreased the FSCM friction that existed during OEF and OIF. A supported commander would have published an effects tasking order for the forces executing and supporting joint objectives in his area of operations. The ETO would have described the concept of operations for integrated joint fires and maneuver. Knowing the concept of operations, desired effects and the doctrinal FSCM standards, the joint force would have had certain expectations on FSCM placement and likelihood of change. Using these proposed doctrine concepts, friendly force tracking systems would have triggered automatic FSCL or FSCA updates that would have been digitally broadcast throughout the joint force. Additionally, open

kill boxes inside the FSCL or FSCA would have closed to prevent fratricide incidents as friendly forces approached. In addition, FSCAs could have been established for the logistic lines of communication supporting the rush towards Baghdad. With a few exceptions, the FSCM system would have been primarily hands-off monitored by the supported component headquarters and appropriate JTASC and overridden only as the situation dictated. Adopting the concepts proposed in this chapter provides the future Joint Force with robust integration, synchronization and coordination mechanisms to conduct joint operations with less friction and greater efficiency.

Notes

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² Ibid, 12.

³ Ibid.

⁴ Colonel Mike Findlay, USA, Lieutenant Colonel Robert Green, USA, and Major Eric Braganca, USA, "Fires and Maneuver – Challenges on the Noncontiguous Battlefield," *The Air Land Sea Bulletin*, Issue 2003-1, (March 2002): 19.

⁵ Lieutenant Colonel Franklin Walden and Master Sergeant Hal Sullivan, "Joint Close Air Support in Support of Operations ENDURING FREEDOM and IRAQI FREEDOM," 18th Air Support Operations Group briefing, AFDD 2-1.3 Counterland Rewrite Conference, Langley AFB, Va., 25 June 2003, slides 4-5.

⁶ "Operation Iraqi Freedom, Third Infantry Division (Mechanized), 'Rock of the Marne', After Action Report," Final Draft, 12 May 2003, 12-8.

⁷ Ibid, 12-4.

⁸ Dr. Rebecca Grant, *Gulf War II: Air and Space Power Led the Way*, An Air Force Association Special Report (Arlington, Va.: Aerospace Education Foundation, 2003), 20.

⁹ "Third Infantry Division (Mechanized) After Action Report," 4-5.

¹⁰ "Third Infantry Division (Mechanized) After Action Report," 4-5, 12-4 - 12-5.

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¹¹ "Third Infantry Division (Mechanized) After Action Report," 12-8 - 12-11.

"Marine Aviation Weapons and Tactics Squadron One Lessons Learned," Issue 151.

¹² Grant, 20.

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¹³ Major Lynn I. Scheel, “Bullet Background Paper on Common Grid Reference System,” (Maxwell AFB, Ala.: Headquarters, Air Force Doctrine Center, 20 November 2003), Attachments 1-5.

Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets, Air Land Sea Application Center, 20 April 2004, G-1. The *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets* changed the term *common grid reference system* to *common geographic reference system* with its publication in April 2004.

¹⁴ Anthony H. Cordesman, *The Lesson of Afghanistan: War Fighting, Intelligence, and Force Transformation*, (Washington, D.C.: CSIS Press, 2002), 110.

¹⁵ Lieutenant Colonel Steve Gray, “Joint Air-Ground Operations: Lesson Learned from Recent Conflicts,” briefing, Langley AFB, Va., 12 May 2003, slide 18. Figure is modified version of the slide 18 from the cited source.

Chapter 8

Creating Synergy and Minimizing Seams

There are many ways of going forward, but only one way of standing still.

Franklin D. Roosevelt

Having proposed doctrine concepts for the future Joint Force in Chapters 3 through 7, this chapter offers a top-level look at the respective Service concepts—Air and Space Expeditionary Task Force (AETF) and the Army’s Future Force—and transformation efforts as they relate to the proposed doctrine concepts. The intent is to highlight synergies and seams detailing how the doctrine concepts may enhance or minimize them, respectively. The conclusions reached in this chapter do not represent the “approved solutions,” rather they are food for thought for use in shaping the future Joint Force.

In accordance with the *Transformation Planning Guidance*, each of the Services is required to publish its detailed transformation strategy to address the challenges of the future. The Air Force’s *Transformation Flight Plan* and the Army’s *Transformation Roadmap* are the basis for analysis in this chapter. The analysis reviews the future organizational constructs for each Service and the transformational capabilities and interdependencies that are applicable to air-ground integration. This chapter concludes with an estimation of synergy and seams and suggestions regarding areas for improvement and further study.

Air and Space Expeditionary Task Force

As a result of the post-cold war environment which required smaller and diverse regional commitments, the Air Force created the air and space expeditionary force (AEF) concept.¹ The concept is designed to allow the Air Force to present trained and ready combat and support forces to combatant commanders on a rotational and predictable basis. An AEF is not an employable entity, but is a pool of trained forces that can provide a set of capabilities to a combatant commander. The Air Force has formed five AEF pairs (ten AEFs total) which evenly divide expeditionary combat and combat support resources across the AEFs. To round out the capabilities of each AEF, air mobility, low density/high demand and enabling (stealth, space, intelligence and bombers) forces are available to supplement, as required.²

Elements of an AEF will organize and deploy as an Air and Space Expeditionary Task Force (AETF). An AETF presents a JFC with a tailored, task-organized and integrated package of Air Force capabilities that have the appropriate balance of force, sustainment, control and force protection.³ An AETF command element will have a commander of U.S. Air Force forces (COMAFFOR), an appropriately sized staff and adequate command and control facilities and mechanisms to direct and support forces in their achievement of joint objectives.⁴ Under this construct, an air and space operations center (AOC) serves as the command and control center for operational air and space forces and an A-staff is responsible for the range of support activities such as logistics, personnel, medical and security.⁵

The AETF force structure is completed by the deployment of tailored AEF force packages organized as air and space expeditionary wings (AEW), groups (AEG) or

squadrons (AES). Each of the expeditionary organizations can be either a deployed unit or unit-slice with the appropriate level of command and control and support assets deployed with it. Figure 10 displays a notional AETF structure.⁶

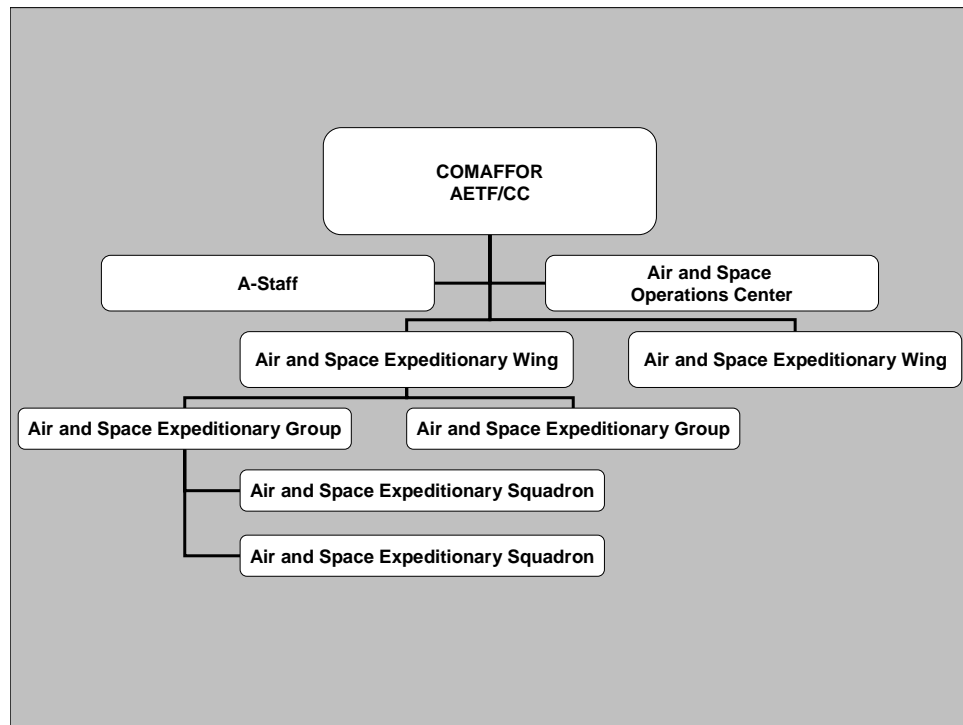


Figure 10 Notional AETF Structure

An Air Force organizational concept in development is the Warfighting Headquarters (WF HQ). The Air Force plans to have ten WF HQs—seven regionally focused and three globally focused. A three- or four-star general will lead each WF HQs and the organization will be right-sized based on its geographic location, responsibilities and mission. The WF HQ is designed to enhance combat capability, integrate combat staffs with AOCs and provide the combatant commander with a single Air Force voice that has a focused-warfighting structure.⁷ The WF HQ will also enable the Air Force to integrate a Standing Joint Force Headquarters into its organization.⁸

Air Force Transformational Capabilities and Interdependencies

The Air Force envisions joint force commanders will be able to see the entire battlespace, identify key adversary centers of gravity and apply the right force to the right place at the right time.⁹ Two concepts that facilitate this vision are parallel warfare and Effects-Based Operations (EBO).¹⁰ Under the EBO concept, joint forces may strike fewer targets with fewer weapons mitigating risk to friendly forces and noncombatants. These concepts can theoretically be effective, but current limitations in technology and *organizational structure* prevent the military from achieving the full potential of parallel warfare and EBO (emphasis added).¹¹

To address some of the current limitations and also enhance future joint warfighting, several initiatives are ongoing between the Air Force and other Services. Those applicable to air-ground integration include:

- ◆ **Air Component Coordination Element** – during OIF, an ACCE team was located within each component headquarters to integrate air and space power with the operations of the other components.
- ◆ **Army-Air Force discussions on improving cooperation** – the Air Force and Army are working to improve air support of ground forces in a number of forums. Action items applicable to this paper include:
 - Update Joint Publication 3-09.3
 - Provide ATACMS fire support to the JFACC
 - Develop Joint Air Liaison Element Concept
 - Improve Liaison Office manning, training and teamwork
 - Install common, interoperable software
 - Develop a Joint Simulator requirement for combat air support
 - Strengthen joint training
 - Institute Battalion Air Liaison Officers attending the Army Battle Staff Course concept
 - Identify command and control integration and training improvements
- ◆ **Improved Data Modem** – will provide critical Joint Surveillance Target Attack Radar System (JSTARS) data to Army Apache helicopter gunships
- ◆ **Joint command and control** – Navy, Marines and Air Force are collaborating to synchronize the development their respective command and control programs, FORCEnet and the Command and Control Constellation.¹²

To move to a capabilities-based expeditionary force, the Air Force developed six CONOPS: Global Mobility, Global Response, Global Strike, Homeland Security, Nuclear Response and Space&C4ISR.¹³ The CONOPS are used to identify warfighting capabilities needed to successfully engage and defeat potential enemies and drive the investment strategies to obtain those capabilities. Although the CONOPS are still in development, preliminary analysis by the Air Force has resulted in an anticipated sixteen transformational capabilities. All sixteen transformational capabilities will impact future joint operations, but seven have particular application to the concepts proposed in this paper.

- ◆ Seamless joint machine-to-machine integration of all manned, unmanned, and space systems
- ◆ Real-time picture of the battlespace
- ◆ Predictive Battlespace Awareness
- ◆ Ensured use of the information domain via effective information assurance and information operations
- ◆ Order of magnitude increase in number of targets hit per sortie
- ◆ Achievement of specific, tailored effects on a target short of total destruction
- ◆ Rapid and precise attack of any target on the globe with persistent effects

The *Transformation Flight Plan* lists a number of Air Force programs that will make these transformational capabilities a reality. Besides the Air Force programs, relevant DOTMLPF solutions and support from the other Services are required for these capabilities to reach their full potential. The support the Air Force requires from the other Services that is specific to air-ground integration include:

- ◆ Jointly developed communications and information systems to satisfy all Services' requirements and to ensure a common operational picture and a single interpretation of processed information. All Services should jointly pursue common hardware and software development to ensure interoperability and to reduce development, procurement, and overall Operation and Maintenance costs.
- ◆ All Services should follow the new Defense Information Systems Agency Net-Centric Operations and Warfare and the Net-Centric Enterprise Services

processes. This will ensure better machine-to-machine interfaces and system interoperability between the Services and joint commands.

- ◆ A joint fire control system-of-systems that enables the Joint Force Commander to seamlessly access the sensor-to-shooter assets of all the Services to put a cursor over a target in a timely manner.
- ◆ Coordinated information operations efforts, to include ensuring that all information systems are effectively protected against adversary information operations.
- ◆ Continued improved coordination of air operations and combat air support between the Services. This includes coming to a common agreement with the Navy on metrics to measure capabilities packaged in an Air and Space Expeditionary Force and a Carrier Strike Group.¹⁴

The Future Force

Like the Air Force, the Army is transforming its force to meet the national security demands of the post-cold war environment. The Army intends to develop more modular, strategically responsive organizations while cultivating and institutionalizing a joint and expeditionary mindset throughout the force.¹⁵ This organizational transformation enables the Army to significantly contribute to increasing a combatant commander's ability to rapidly defeat an adversary or control any situation across the range of military operations.¹⁶ To achieve this end, the Future Force will be organized into two modular capabilities-based joint organizations—Unit of Action (UA) and Unit of Employment (UE).¹⁷

The UA will be brigade-size combat maneuver elements and be the decisive, tactical warfighting elements within the Army.¹⁸ Modular Units of Employment as either an UE_X or UE_Y will provide command and control for Units of Action. Within this construct, the UE_X would be a higher tactical headquarters and the UE_Y would be an operational-level headquarters.¹⁹ Besides having the capability to accept joint capabilities such as a Standing Joint Force Headquarters, both UE types will have the

organic capability to serve as a joint task force or land component headquarters.²⁰ Figure 11 illustrates how the Future Force levels of command will transform from their current state to one which supports the modular and responsive Future Force. In addition to the UE, Future Force organizations will be supported by Home Station Operations Centers (HSOC) which facilitate rapid force projection and provide reachback, planning and analysis capabilities while reducing the forward-deployed footprint.²¹

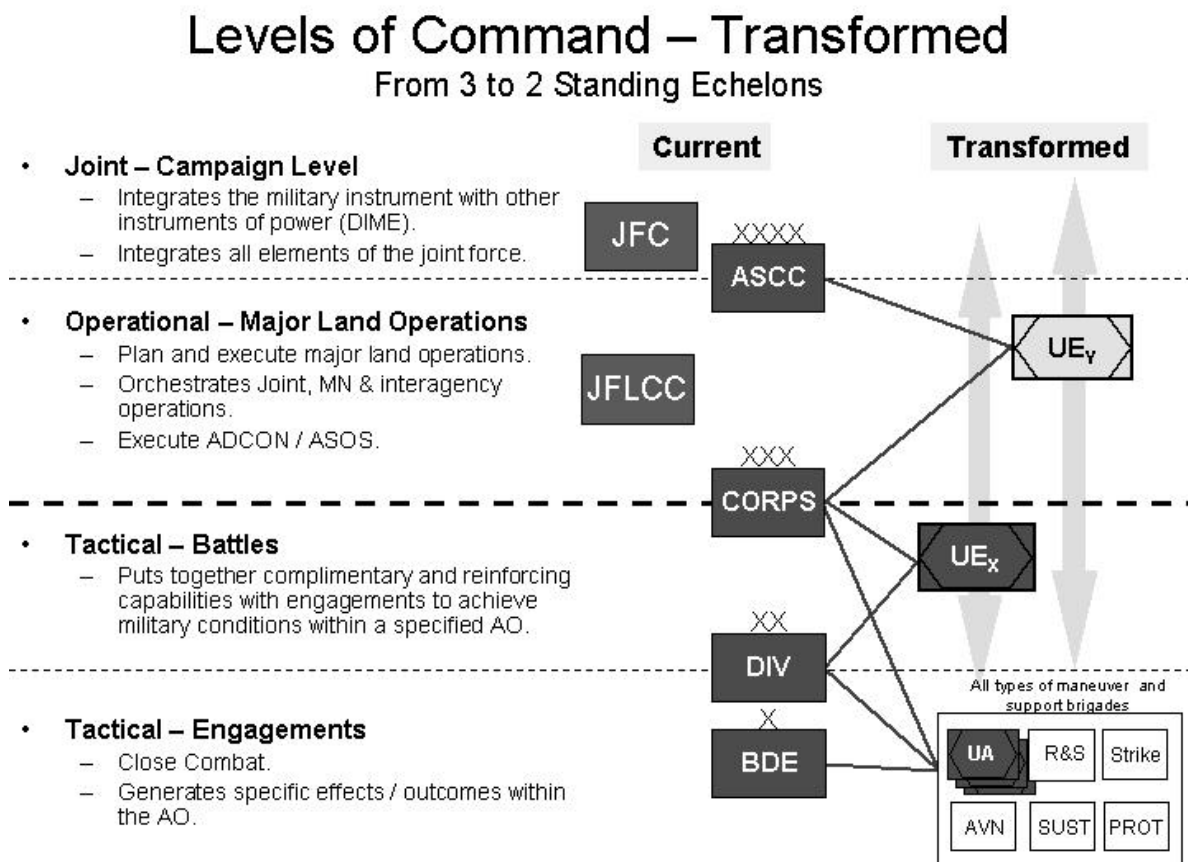


Figure 11 Future Force Levels of Command²²

Army Transformational Capabilities and Interdependencies

The modular capabilities-based Future Force will enable a joint force commander to create rapidly deployable and tailorable force capability packages, which will enhance and enable full-spectrum dominance by the future Joint Force.²³ Future Force campaigns

will embody interdependent, network-centric, effect-based operations, which will be characterized as simultaneous, distributed, noncontiguous and nonlinear.²⁴ The broad dispersal of joint forces in a rapidly executed operation with these attributes will place heavy demands on joint force leadership and command and control.²⁵ In that light, the Army views battle command, the art and science of applying leadership and decision making to achieve mission success, as an essential operational capability.²⁶

Under the overarching *JOpsC*, there are four supporting Joint Operating Concepts or JOCs. The *Army Transformation Roadmap* uses the JOCs to define capabilities the Future Force and Joint Force will require to be successful. Although the JOCs are interrelated and are not likely to be executed in isolation, the Army identifies the following required air-ground integration applicable capabilities to support the Major Combat Operations JOC:

- ◆ Modular, combined arms combat forces rapidly deployable, in a ready-to-fight configuration, into a JOA or multiple JOAs at the times and locations required by the combatant commander and consistent with time frames specified in the Defense Strategy
- ◆ As part of networked joint fires linking sensors to shooters, line-of-sight (LOS) and non-line-of-sight (NLOS), kinetic and nonkinetic lethality capabilities that deliver precise and desired effects at the ranges required for decisive operations by rapid, integrated and near-simultaneous application of joint forces throughout the joint operations area
- ◆ Battle command on-the-move capabilities that support and enable rapid, integrated and near-simultaneous operations throughout the joint operations area, including the land force component of the common operational picture, real-time blue and gray force (commercial, civilian, noncombatant, etc.) tracking, en-route/on-the-move mission planning and rehearsal capabilities, and long-range communications
- ◆ Knowledge-based collaborative planning and decision support tools integrated with joint planning systems/processes, including near-term good-enough capabilities and, for the longer-term, development of a single, joint interoperable battle command system of systems
- ◆ Army force headquarters designed to operate as a joint force land component commander headquarters, and when augmented with the appropriate SJFHQ

and Joint Interagency Coordination Group (JIACG) elements, function as a joint task force headquarters

- ◆ Home Station Operations Centers to support rapid force projection and provide reachback, planning and analysis capabilities, while reducing footprint in the joint operations area²⁷

The Army also identifies several interdependent capabilities required by the joint community that are applicable to future air-ground integration.

- ◆ Joint-integrated command, control, communication, computers and intelligence, surveillance and reconnaissance capabilities and networks to gain information superiority, share a common operational picture, determine the enemy's systemology, enhance joint-integrated information operations, and improve the ability of joint force and component commanders to synchronize operations based on better, more timely decisions at a pace that the enemy cannot match
- ◆ Commonality of doctrine, terms, graphics, tactics, techniques, and procedures, and visual tools and displays
- ◆ Networked joint fires that support mounted and dismounted maneuver in all conditions throughout the breadth and depth of the joint operations area
- ◆ Joint-integrated fire control system of systems for more effective and timely application of all-source fires and effects²⁸

The *Army Transformation Roadmap* lists a number of transformational capabilities to make the Future Force a relevant and ready asset to the joint team. In addressing future battle command issues, Army and joint analysis has provided some insight into essential capabilities for the future Joint Force.

- ◆ Joint and coalition interoperability, a requirement to meet joint interoperability existing and emerging standards over time
- ◆ Friendly locations, a need for a near real time, digitized visualization tool to display locations of all Services, allies, coalition and interagency formations within the battlespace
- ◆ Current enemy situation, a need for a digital visualization tool to display and provide knowledge of all enemy formations in the battlespace
- ◆ Running estimate, a collaborative, predictive tool and capability tied to the commander's critical information requirements and decision making
- ◆ Graphic control measures, a need for a management and visualization tool to display operational graphics in relationship to the joint operations area and terrain

- ◆ Fragmentary order, a digital capability to exchange information changes of mission, intent, priorities with higher, lower and adjacent units in the battlespace
- ◆ Fire support coordination measures, a need for a digitized, visualization and management tool that enables the execution and deconfliction of fires²⁹

The combination of the interdependent capabilities and the battle command essential capabilities point out the types of capabilities the future Joint Force will require to achieve air-ground integration.

The Way Ahead

Before specifically addressing the potential synergies and seams and how the doctrine concepts introduced in this paper may enhance or minimize them, respectively, a short summary of the concepts might be helpful.

- **Supported/Supporting Relationships:** Support relationships should not be predetermined by an area of operations or doctrinal mission. Declaration of support relationships, areas of operations and mission responsibilities are left to the discretion of the JFC to best facilitate his concept of operations.
- **Establishing Directives and Emerging Concepts:** Use establishing directives, campaign plans, operation plans and/or operation orders, that explicitly state support relationships, commander's intent, mission-type orders and triggers for joint battle handover. The establishing directive would employ a standardized format and be written for a joint cross-functional audience. Emerging command and control concepts include joint tactical actions, prioritized effects lists, effects tasking orders, Standing Joint Force Headquarters, reachback and alternative command structures.
- **Synchronization of Interdiction and Maneuver:** Change synchronization to integration, employing prioritized effects lists and effects tasking orders. Consider integrated interdiction and maneuver a joint tactical action controlled by Joint Tactical Action Support Centers that can increase their core capabilities via augmentation or reachback, as required.
- **Joint Fires Concepts:** All fires in support of a joint force commander's concept of operations are joint fires. Command and control of integrated joint fires and maneuver executed by responsive and interoperable joint organizations at every level—component coordination elements, joint tactical action support centers and joint fire control teams.
- **Fire Support Coordination Measures:** Establish a joint three-dimensional common grid reference standard which can be used to rapidly designate coordination measures. Use fire support coordination areas in nonlinear and

noncontiguous operations. Couple digitized friendly force tracking with digitized coordination measures using established doctrinal standards to facilitate real-time updates.

Considering the transformation efforts by the Air Force and Army, the doctrine concepts listed above can become a reality for the AETF and the Future Force. Both Services have common goals that they are either working towards or have identified require more attention. A top level review of these efforts shows not only the promise for future Joint Force synergy, but also the potential for seams (Table 1).

Table 1 Potential Synergies and Seams

POTENTIAL SYNERGY	POTENTIAL SEAM
Modular, tailorable and expeditionary organizational structure	Methodology or tools for capabilities-based tradeoffs
New operational-level organizations focused on warfighting	Lacking jointly developed and interoperable communication and information systems to allow seamless integration
	Liaison concepts for new headquarters
Digital fragmentary order	Digitized establishing directive and overarching mechanisms to integrate effects
Joint-integrated fire control system-of-systems	Comparable maneuver control system-of-systems to integrate joint fires and maneuver
Digitized coordination measures	Methodology to decrease decision-cycle times

The AETF and Future Force are both modular and expeditionary organizational structures designed to support the needs of future JFCs. These organizational schemes can allow a JFC to create tailored force packages to generate the synergistic effects required to achieve his operational objectives. However, a methodology does not exist to allow a JFC to execute capabilities-based tradeoffs to ensure the best mix of capabilities is included in a tailored joint force package. The Air Force has specifically mentioned

this requirement when comparing AEFs with carrier strike groups, but this concept needs to expand throughout the joint force to avoid an inappropriate mix of capabilities with an oversized deployed footprint. The paper recommends development of capability tradeoff models to assist future commanders in rapidly assessing a mix of joint capabilities and making adjustments as the situation dictates to maximize synergy and minimize seams.

Both Services are developing operational-level command structures to support their modular forces. The Warfighting Headquarters and Unit of Employment both state that they can be augmented by SJFHQs. However, seamless augmentation will depend upon jointly developed communications and information systems—an interdependent capability identified by both Services. As these headquarter concepts are developed, this paper recommends developing a minimum essential joint communications and information systems list. Developing and enforcing such a list facilitates the seamless integration of command and control organizations like the SJFHQs, component coordination elements and joint tactical action support centers.

Liaison manning, training and teamwork have had success and are still being worked by the Air Force and Army. As the WF HQ, UE and HSOC concepts are developed, liaison concepts must evolve to keep pace. Adopting the coordination control element for all components, as proposed in this paper, can assist in addressing this broad issue. The Services must identify their liaison requirements for each of their respective headquarters organizations. They must also determine CCE manning levels for both steady-state and contingency operations. During OIF, the air component stood up seven previously non-existent Air Component Coordination Elements, the largest being at the land component headquarters.³⁰ Conversely, the Army has four standing Battlefield Coordination

Detachments, three active and one reserve, that can be placed in an AOC.³¹ The Services must settle on the number of CCEs required and whether they are activated only during contingencies, fully manned and functional at all times or somewhere in between. Regardless of what liaison concept the Services elect to pursue, liaison manning and training requirements will be issues that must be dealt with, preferably sooner than later.

A promising essential capability described in the *Army Transformation Roadmap* related to establishing directives is the digital fragmentary order.³² An abbreviated operation order, the digital fragmentary order is designed to quickly disseminate changes of mission, intent and priorities. This paper recommends expanding this capability to include the establishing directive (which articulates the original mission, intent and priorities), prioritized effects list and effects tasking order concepts. Adopting and expanding this capability enables the future Joint Force to digitally disseminate mission, intent and prioritized effects and rapidly match those effects to capabilities for execution.

Joint-integrated fire control systems that allow machine-to-machine interface to facilitate seamless sensor-to-shooter execution have been identified by both Services as a capability that needs joint attention. Creating the previously discussed minimum essential joint communications and information systems list is an avenue to address this issue. However, an air-ground integration seam is likely to exist until fully interoperable communications and information systems are available that can execute integrated joint fires and maneuver. This paper recommends the Services expand this issue to include developing comparable systems to control joint maneuver. Adopting the proposals in this paragraph and fire support coordination measure recommendations in this paper can

facilitate digitized coordination measures and decrease decision cycle times during rapidly executed, dispersed operations.

Conclusion

The future Joint Force has outstanding potential for synergy at the right place, at the right time, with the right effect. However, as this paper suggests reaching that potential still requires some work to eliminate or at least minimize the seams. Despite the challenges associated with the fog and friction of combat operations, today's Joint Force has executed exceptionally well. Successful operations have relied on ingenuity and drive when doctrine for the situation was either not appropriate or not yet developed. Advancing air-ground integration will require doctrine compromises by both Services and several technological solutions that are either in development or still need joint attention. While waiting for technological solutions, doctrine development for the future Joint Force should not stagnate and the Services should recognize that doctrine compromises in the near-term are sure to be less costly than seams in future joint operations. To create synergy and minimize seams, the doctrine concepts proposed in this paper should be adopted and/or explored in more detail to facilitate air-ground integration during rapidly executable, globally and operationally distributed, simultaneous and sequential operations.³³

Notes

¹ Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, 17 November 2003, 73.

² United States Air Force, *The U.S. Air Force Transformation Flight Plan*, (Washington, D.C.: Headquarters, United States Air Force, Future Concepts and Transformation Division, November 2003), 31.

³ AFDD 1, 73.

Notes

⁴ Air Force Doctrine Document (AFDD) 2, *Organization and Employment of Aerospace Power*, 17 February 2000, 36.

⁵ Ibid, 36-37.

⁶ Ibid, 42.

⁷ *The U.S. Air Force Transformation Flight Plan*, 40.

⁸ Ibid, B-3.

⁹ Ibid, 6.

¹⁰ Ibid. Parallel warfare refers to simultaneous attack of carefully selected targets as opposed to a sequential destruction of targets. Effects-based operations are based on designing campaign actions to achieve desired outcomes rather than simply destroying targets.

¹¹ Ibid, 7.

¹² Ibid, 15-16.

¹³ Ibid, 41.

¹⁴ Ibid, 72-73.

¹⁵ United States Army, *2003 United States Army Transformation Roadmap*, (Washington, D.C.: Headquarters, Department of the Army, Army Transformation Office, 1 November 2003), 1-11.

¹⁶ Ibid.

¹⁷ United States Army, *The Army in 2020 White Paper*, (Arlington, Va.: Objective Force Task Force, 1 November 2003), 10.

¹⁸ *The Army in 2020*, 10.

¹⁹ *2003 United States Army Transformation Roadmap*, 1-11.

²⁰ Ibid.

²¹ *2003 United States Army Transformation Roadmap*, 3-10.

²² *Unit of Employment (UE) Operations White Paper*, Version 2.4, Fourth Draft, (Fort Leavenworth, Kans.: Army Command and General Staff College, 19 February 2004), 8.

²³ *2003 United States Army Transformation Roadmap*, 1-11.

²⁴ Ibid, 1-9.

²⁵ Ibid, 3-6.

²⁶ Ibid, 2-1.

²⁷ Ibid, 3-9 – 3-10.

²⁸ Ibid, 3-11 – 3-12.

²⁹ Ibid, 8-7.

³⁰ Amy Butler, “As A-10 Shines In Iraq War, Officials Look To JSF For Future CAS Role,” *Inside the Air Force*, 23 May 2003, n.p., on-line, Internet, 16 February 2004, available from http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=AIRFORCE-14-21-7.

³¹ Lieutenant Colonel Thomas L. Kelly and Lieutenant Colonel (Retired) John P. Andreasen, “Joint Fires: A BCD Perspective in Operation Freedom,” *Field Artillery*, November-December 2003, 24, on-line, Internet, 10 February 2004, available from <http://sill-www.army.mil/FAMAG/>.

Notes

³² Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 213. A fragmentary order is an abbreviated form of an operation order (verbal, written or digital) usually issued on a day-to-day basis that eliminates the need for restating information contained in a basic operation order. It may be issued in sections. It is issued after an operation order to change or modify that order or to execute a branch or sequel to that order.

³³ Department of Defense, *Joint Operations Concept* (Washington, D.C.: Director of Operational Plans and Joint Force Development, Joint Staff J-7, November 2003), 9.

Appendix A

Current Doctrine: Supported/Supporting Relationships

Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, states that support is a command authority that can be exercised by commanders at any echelon at or below the level of combatant command.¹ Flexible by design, the support relationship conveys priorities and resources required for the planning and execution of joint operations.² In short, it helps commanders manage expectations between and within elements of a joint force.

When designating a supported commander, the Joint Force Commander (JFC) stipulates the purpose and time associated with the designation. Unless limited by the JFC, the supported commander has the authority to exercise the general direction of the supporting effort to include designation and prioritization of targets or objectives, timing and duration of the supporting action and any additional guidance to ensure the efficiency and success of the supported effort.

In accordance with current joint doctrine, the supporting commander aids, protects, complements or sustains the supported commander's force and is responsible for providing the assistance required by the supported commander.³ A supporting commander is involved in the planning and integration of his forces and capabilities into the supported commander's scheme of operations. He ascertains the needs of the

supported force, ensures the support requirements are communicated within his organization(s) and takes the appropriate actions within existing capabilities, consistent with priorities and requirements of the assigned tasks.⁴

Designating Support Relationships by Areas of Operations and Missions

Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, describes an area of operations as an operational area defined by the joint force commander for land and naval forces.⁵ An area of operations does not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces.⁶ More importantly, joint doctrine declares that land and maritime component commanders are the supported commanders within their assigned areas of operations. Additionally as supported commanders, they are responsible for integrating and synchronizing maneuver, fires and interdiction within their assigned area of operations. Under this authority, land and naval commanders designate target priorities, effects and timing of fires within their respective areas of operations.⁷

As depicted in Figure 12, the area of operations definition connotes that the areas outside the land and naval areas of operations belong to the JFC and are not necessarily assigned to another component commander. The JFC can, however, designate a joint special operations area for the conduct of special operations activities.⁸ Similar to the land and maritime component commanders, joint special operations commanders are supported commanders within a joint special operations area.⁹

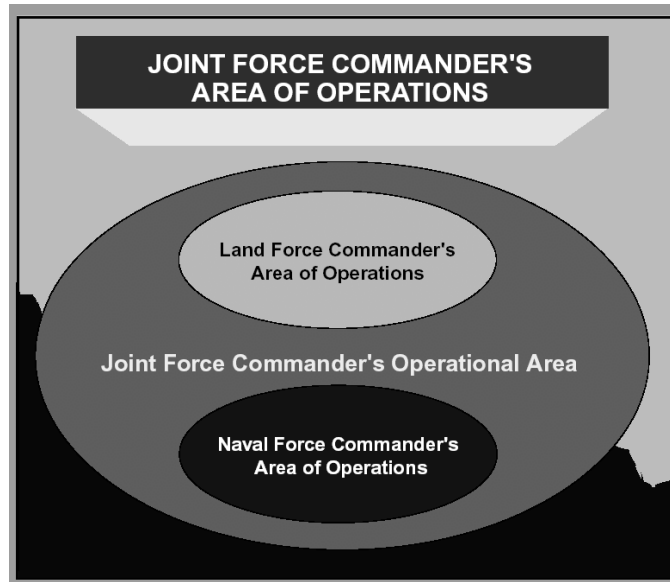


Figure 12 Area of Operation¹⁰

As with areas of operations, doctrinal missions have been used in the past to define supported/supporting relationships. For example, the joint force air component commander (JFACC) is normally the supported commander for the theater and/or joint operations area-wide counterair and overall air interdiction missions.¹¹ The joint doctrine tide, however, is shifting away from specifically designating supported/supporting relationships by mission with the recent approval of Joint Publication 3-30, *Command and Control of Joint Air Operations*. Specific missions that once defined supported/supporting relationships for the air component are now listed as responsibilities.¹²

Notes

¹ Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, 10 July 2001, xii.

² Joint Doctrine Encyclopedia, 16 July 1997, 659.

³ Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 511.

⁴ Joint Doctrine Encyclopedia, 664-665.

Notes

⁵ Joint Publication 1-02, 385. An operational area is an overarching term encompassing more descriptive terms for geographic areas in which military operations are conducted.

⁶ Ibid, 44.

⁷ Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, II-10.

⁸ Joint Publication 1-02, 288. A special operations area is defined as a restricted area of land, sea and airspace assigned by a joint force commander to the commander of a special operations force to conduct special operations activities.

⁹ Joint Publication 3-05, *Doctrine for Joint Special Operations*, 17 December 2003, III-7.

¹⁰ Joint Doctrine Encyclopedia, 46.

¹¹ Joint Publication 3-01, *Joint Doctrine for Countering Air and Missile Threats*, 19 October 1999, II-4. counterair is defined as a mission that integrates offensive and defensive operations to attain and maintain a desired degree of air superiority. Counterair missions are designed to destroy or negate enemy aircraft and missiles, both before and after launch.

Joint Publication 3-03, *Doctrine for Joint Interdiction Operations*, 10 April 1997, II-8.

¹² Joint Publication, 3-30, *Command and Control for Joint Air Operations*, 05 June 2003, II-1 – II-2.

Appendix B

Current Doctrine: Establishing Directives

Joint Publication 1-02 defines command and control as:

The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through the arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.¹

Command requires joint force commanders visualize the current state of friendly and enemy forces, and then formulate concepts of operations to achieve a desired end. Control regulates friendly forces and functions to execute commander's intent by assessing requirements, allocating means and integrating effects.² Carrying out these inherent command and control functions requires capable planning and execution systems. The precision with which these systems operate significantly enhances the speed and accuracy of information transfer between commanders thus increasing synergy during joint operations.³

Establishing Directive

To allow the exercise of command and control authorities, the joint force commander normally issues an *establishing directive*. As an establishing authority, the JFC is responsible for ensuring that both the supported and supporting commanders understand

the degree of authority the supported commander is granted. An *establishing directive* is used at all levels of command and normally includes the components detailed in Figure 13.

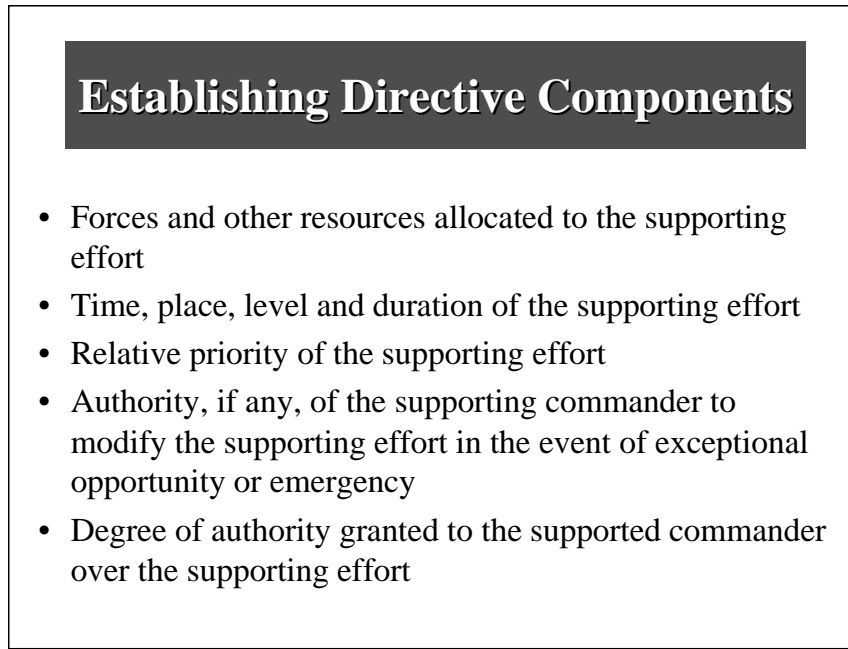


Figure 13 Establishing Directive Components⁴

The following *establishing directive* guidance from existing joint doctrine is provided as a frame of reference.

An establishing directive is normally issued to specify the purpose of the support relationship, the effect desired, and the scope of the action to be taken. It should also include:

- the forces and other resources allocated to the supporting effort;
- the time, place, level, and duration of the supporting effort;
- the relative priority of the supporting effort;
- the authority, if any, of the supporting commander to modify the supporting effort in the event of exceptional opportunity or an emergency;
- the degree of authority granted to the supported commander over the supporting effort.

Unless limited by the establishing directive, the supported commander will have the authority to exercise general direction of the supporting effort.

General direction includes the designation and prioritization of targets or objectives, timing and duration of the supporting action, and other instructions necessary for coordination and efficiency.⁵

Commander's Intent and Mission-Type Orders

Embedded within an *establishing directive* and key to achieving the implicit communication desired are two underlying concepts discussed in joint doctrine—commander's intent and mission-type orders. Both of these concepts are essential to allow decentralized execution of joint operations. Commander's intent concisely expresses the purpose and desired end state of an operation. It is not a summary of the concept of operations, but is the overarching guidance that allows subordinates to pursue the desired end state without further orders.⁶ So as not to stifle initiative during changing situations, the intent statement may contain an assessment on where and how the commander is willing to accept increased risk during the operation. Despite the changing conditions and unexpected challenges during the operation, the commander's intent usually remains unchanged.

Having defined the desired end-state with commander's intent, mission-type orders outline the execution to reach that end-state. Mission-type orders direct the joint force to perform a mission without specifying how it is to be accomplished. In accordance with his intent and concept of operations, a superior commander delegates the authority and responsibility to conduct elements of operations by issuing mission-type orders. Most importantly, the details of execution and freedom of action to accomplish the mission are left to the subordinate.⁷ The lack of specifics encourages initiative and facilitates decentralized execution within a joint force.

Notes

¹ Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 100.

² Joint Doctrine Encyclopedia, 16 July 1997, 161.

³ Ibid, 162.

⁴ Ibid, 659-660.

⁵ Ibid, 663.

⁶ Ibid, 175.

Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, 10 July 2001, III-15.

⁷ Joint Doctrine Encyclopedia, 522-523.

Joint Publication 0-2, III-15.

Appendix C

Current Doctrine: Synchronization of Interdiction and Maneuver

Interdiction Definition

Joint Publication 1-02 defines interdiction as an action to divert, disrupt, delay, or destroy the enemy's surface military potential before it be can used effectively against friendly forces.¹ The target type, weapon employed or executing component does not define an operation or mission as interdiction, the effect desired does. Current joint doctrine outlines four objectives, or effects, that can be achieved by interdiction—diversion, disruption, delay and destruction.

Diversion prevents enemy forces from reaching their operational or tactical objectives. More specifically, interdiction missions are designed to *divert* adversary resources from being used for their intended purpose(s). This includes personnel, equipment or supplies reaching a specific location at a designated time to counter friendly force objectives. It could also include diverting enemy resources to repair damage from an interdiction mission or protect vulnerable centers of gravity.² Interdiction attacks on lines of communications, critical infrastructure and telecommunications nodes *disrupt* an enemy's movement of resources and information.³ Additionally, interdiction can *delay* an enemy's movement of warfighting resources increasing the time an adversary is

vulnerable to attack and maneuver effects promulgated by a joint force.⁴ Finally, *destruction* is the “most direct” interdiction method and can cause diversion, disruption and/or delay to an enemy force.⁵ Clearly, the four interdiction objectives, or effects, are closely related and are not typically realized in isolation. Each objective or effect has the potential to make an enemy vulnerable to the joint force by channeling movement, constricting logistics and forcing inadequately planned and time-urgent movements.⁶

Although Joint Publication 3-03 suggests that interdiction is accomplished by any component of the joint force, the focus of the publication is *air interdiction*. Additionally, the Joint Publication 1-02 definitions for air interdiction and interdiction differ.

Air interdiction operations are defined as air operations conducted to destroy, neutralize or delay the enemy’s military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required.⁷

Since a JFACC has the preponderance of the interdiction assets that have theater- and/or JOA-wide range and capability, he is delegated the responsibility to plan and execute theater- and/or JOA-wide interdiction operations.⁸ Also, if supported land or naval commanders cannot strike an interdiction target in their respective areas with organic assets, the target is turned over to the JFACC for prosecution with joint interdiction assets.⁹ Interestingly, the only joint interdiction assets the JFACC controls are air assets.

Maneuver Definition

In the context of synchronizing with interdiction, joint doctrine defines maneuver as the employment of forces in the battlespace through movement in combination with fires to achieve a position of advantage in respect to the enemy in order to accomplish the mission.¹⁰ Maneuver places an adversary in a position of disadvantage through the flexible application of combat power at decisive points achieving surprise, psychological shock and physical momentum.¹¹ By maneuvering to a position of advantage, air, land and naval forces control an adversary's centers of gravity achieving an effect versus through attrition warfare. Creating the right effect at the appropriate time renders an opponent incapable of resistance and impacts his ability to operate as an effective fighting force.

The concept of maneuver is in a process of evolution within joint doctrine. The Joint Doctrine Encyclopedia, dated 1997, identifies land and naval forces (including their organic air assets) as the only elements of the joint force which can maneuver to control enemy centers of gravity.¹² The 2001 update of Joint Publication 3-0 no longer makes the distinction between organic and non-organic air assets and now includes air forces as a maneuver element.¹³ Considering all air assets maneuver elements is a step in the right direction. However, joint doctrine lacks detail on how air maneuver might be integrated into joint operations.

Synchronization of Interdiction and Maneuver

Joint Publication 1-02 defines synchronization as the arrangement of military actions in time, space and purpose to produce maximum relative combat power at a decisive place and time.¹⁴ When interdiction and maneuver are synchronized, they can be the

most dynamic concept available to the joint force.¹⁵ The complimentary aspects of maneuver and interdiction creates dilemmas for an adversary force requiring time-critical decisions, which could put that force at a disadvantage. An opponent can elect to remain stationary and engage maneuver forces from a disadvantage or reposition and expose its resources to interdiction strikes. If the joint force is at a disadvantage, interdiction can divert, disrupt, delay or destroy elements of an adversary force so the joint force can maneuver and engage on advantageous terms.

Notes

¹ Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 266.

² Joint Publication 3-03, *Doctrine for Joint Interdiction Operations*, 10 April 1997, I-2.

³ Ibid, I-2 – I-3.

⁴ Ibid, I-3 – I-4.

⁵ Ibid, I-4.

⁶ Ibid, I-4 – I-5.

⁷ Ibid, II-4.

⁸ Ibid, II-7.

⁹ Ibid, II-13.

¹⁰ Joint Publication 1-02, 316.

¹¹ Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, IV-9.

¹² Joint Doctrine Encyclopedia, 16 Jul 1997, 481.

¹³ Joint Publication 3-0, IV-10.

¹⁴ Joint Publication 1-02, 516.

¹⁵ Joint Publication 3-0, IV-14.

Appendix D

Current Doctrine: Joint Fires

Joint Publication 3-09, *Doctrine for Joint Fire Support*, defines fires as the effects of lethal or non-lethal weapons.¹ In accordance with doctrine, air, land, naval, space and special operations assets are all capable of delivering fires.² This definition covers the whole gambit of effects available to a joint force commander. Lethal weapons effects are more commonly thought of when one thinks of fires in combat operations. However, this definition includes non-lethal weapons effects usually delivered via non-kinetic means, like electronic warfare, psychological operations and information operations.³ Fires produced during the employment of forces from two or more components in coordinated action toward a common objective are defined as joint fires.⁴

Joint fire support is defined as joint fires that assist air, land, maritime, amphibious and special operations forces to move, maneuver, and control territory, populations, airspace and key waters.⁵ The joint fire support structure is composed of three parts: target acquisition, command and control and attack resources.⁶ In combination, these three subsystems enable a joint force commander to achieve his objectives by being able to find, fix, track, target, engage and assess an adversary target set.

Joint Fires Command and Control

Joint fire support command and control should encompass the entire realm of joint fires, both surface-delivered and air-delivered. Joint doctrine, however, focuses its discussion on the command and control of *air-delivered* joint fires as can be seen in both joint interdiction and close air support (CAS) doctrine discussions. In fact, the command and control structure used to execute joint fire support is found in Joint Publication 3-09.3, *Joint Tactics, Techniques and Procedures for Close Air Support* and is extremely complicated. A wiring diagram of the Theater Air Ground System Coordination Links (Figure 14) is included below not so much for its content, but to merely demonstrate the complexity associated with the command and control of joint fires.

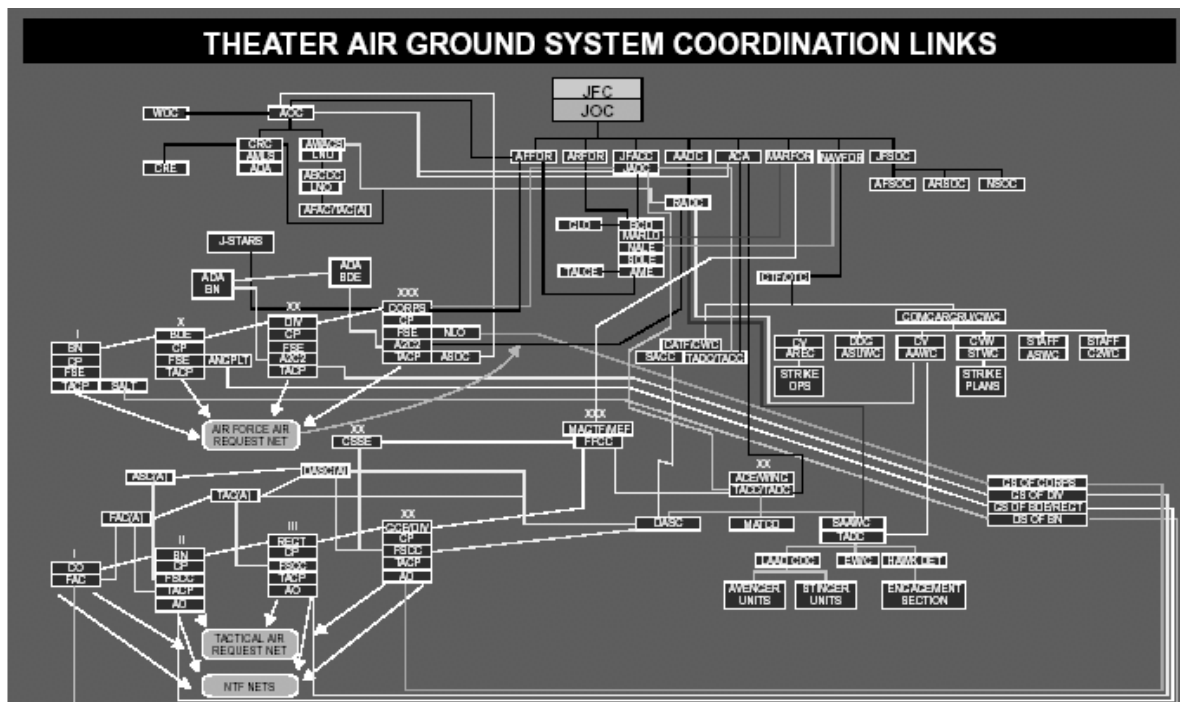


Figure 14 Theater Air Ground System Coordination Links⁷

Joint Publication 3-09.3 outlines how these coordination links are executed relative to command relationships. It states that if a command relationship is established between

components, the supporting components use the command and control system of the supported component.⁸ If a command relationship is not established, each component uses its own command and control system.⁹ This can be a daunting task considering that joint doctrine discusses five different command and control systems that might be used. As Figure 15 illustrates, the CAS command and control agencies vary by component and do not possess the same capabilities across the board. For ease of explanation within this paper, the CAS command and control agencies have been grouped into four categories: component headquarters, liaison elements, planning, coordination and control agencies and terminal control assets.

The component headquarters is the senior agency for tasking and exercising joint fires support. The liaison elements provide an interface between the supported and supporting components of the joint force. Figure 15 depicts the liaison elements that are found within an air and space operations center. The planning, coordination and control agencies are primarily responsible for battle management and joint fire support planning, coordination, integration and synchronization functions. Finally, terminal control assets are typically the principal liaison with ground maneuver units serving as advisors on the employment and limitations of air power. They assist in the planning, requesting and coordinating of CAS assets and are uniquely qualified to conduct terminal attack control for CAS aircraft. In some cases, terminal control assets may include a forward air controller (airborne) or FAC(A), an airborne extension of surface-based terminal control assets.¹⁰

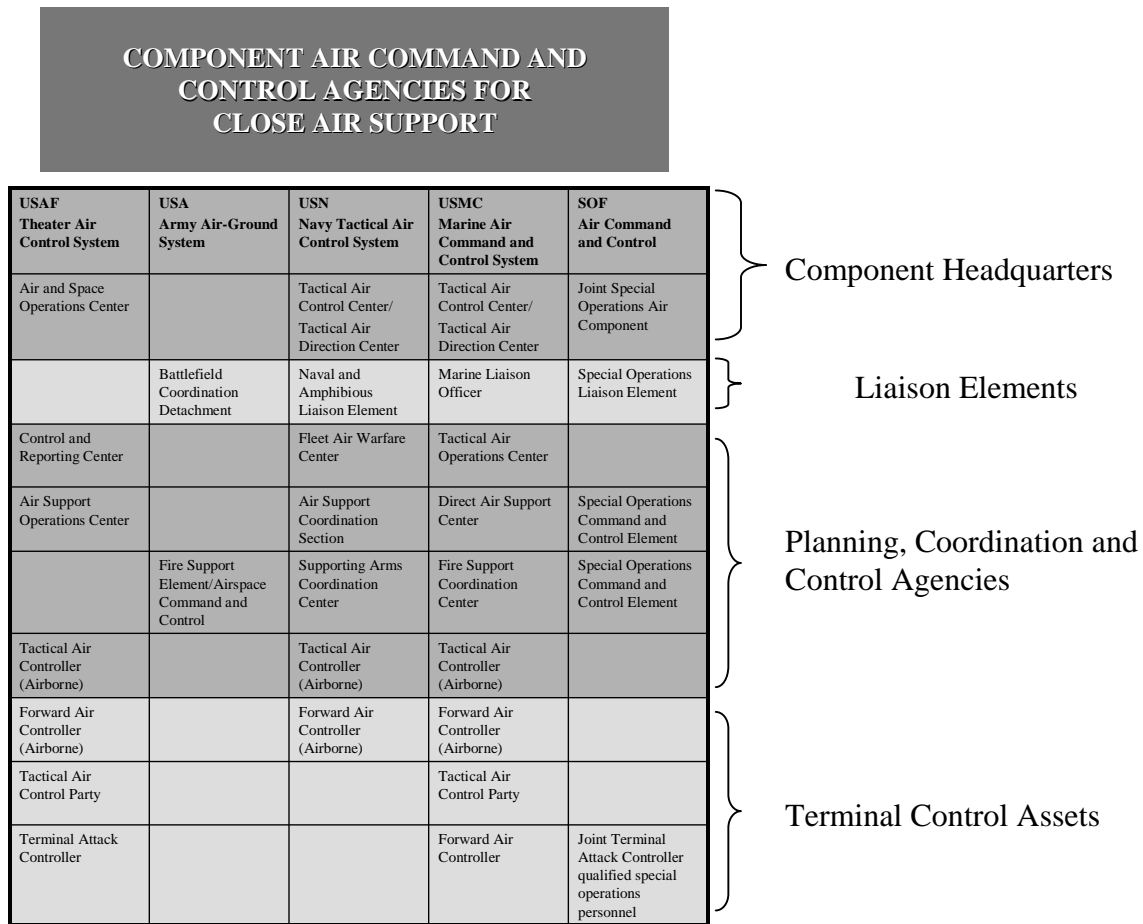


Figure 15 Component Air Command and Control Agencies for Close Air Support¹¹

As the last couple of paragraphs have described, the execution of joint fire support is CAS-centric. When doctrine addresses joint fire support, CAS command and control structures and processes are the only ones discussed. Current joint doctrine provides very little guidance on the command and control of all joint fires. The combination of CAS-focus and lack of other joint fires command and control guidance is a doctrine deficiency. To achieve the *JOpsC* vision, doctrine concepts are required to support joint fires from any and all elements of the joint force.

Notes

¹ Joint Publication 3-09, *Doctrine for Joint Fire Support*, 12 May 1998, I-1.

² Ibid.

³ Ibid.

⁴ Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 279.

⁵ Ibid.

⁶ Joint Publication 3-09, II-1.

⁷ Ibid, II-8.

⁸ Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, 3 September 2003, II-1.

⁹ Ibid, II-1.

¹⁰ Ibid, II-10.

¹¹ Ibid, II-3.

Appendix E

Current Doctrine: Fire Support Coordination Measures

Fire support coordination measures (FSCM) are designed to expedite attack of targets; protect forces, populations, critical pieces of infrastructure and sites of religious or cultural significance; deconflict fire support operations; and establish conditions for future operations.¹ Permissive measures are established to facilitate the attack of targets. With the exception of the fire support coordination line (FSCL), permissive measures do not require additional detailed coordination prior to weapons employment.² Conversely, restrictive measures are primarily designed to protect friendly forces and thus impose requirements for specific coordination before target engagement.³ Elements of the joint force have different perspectives on permissive FSCMs and how their placement takes the best advantage of their respective capabilities. This difference of opinion has led to some air-ground operations friction. The ability for so many elements of the joint force to effect an adversary with fires in a permissive environment drives the debate on two of the more commonly employed permissive measures, the fire support coordination line and kill box.

Fire Support Coordination Line

The FSCL might well be considered the most important line in the battlespace related to air-ground operations. The FSCL placement defines command and control and

support relationships for the execution of joint fires. Joint Publication 1-02 defines the FSCL as follows:

A fire support coordinating measure that is established and adjusted by appropriate land or amphibious force commanders within their boundaries in consultation with superior, subordinate, supporting, and affected commanders. Fire support coordination lines facilitate the expeditious attack of surface targets of opportunity beyond the coordinating measure. An FSCL does not divide an area of operations by defining a boundary between close and deep operations or a zone for close air support. The FSCL applies to all fires of air, land, and sea-based weapons systems using any type of ammunition. Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide. Supporting elements attacking targets beyond the FSCL must ensure that the attack will not produce adverse attacks on, or to the rear of, the line. Short of an FSCL, all air-to-ground and surface-to-surface attack operations are controlled by the appropriate land or amphibious force commander. The FSCL should follow well-defined terrain features. Coordination of attacks beyond the FSCL is especially critical to commanders of air, land, and special operations forces. In exceptional circumstances, the inability to conduct this coordination will not preclude the attack of targets beyond the FSCL. However, failure to do so may increase the risk of fratricide and could waste limited resources.⁴

There is a distinct difference in joint fires employment short of and beyond the FSCL. Short of the FSCL, the appropriate surface commander *controls* all fires. Beyond the FSCL, all commanders must *coordinate* in sufficient time to allow the necessary deconfliction and protection actions to take place. Attacks beyond the FSCL must not produce adverse effects or be considered “free-fire area” operations. They must be coordinated and deconflicted to the maximum extent possible in the support of joint force objectives.⁵ Additionally, FSCL changes must be coordinated and disseminated to all affected forces in sufficient time to allow incorporation within these forces and/or their components. Six hours is the doctrinal standard to accomplish coordination and dissemination.⁶

The FSCL is not a requirement for joint operations, but if used its placement should be based on the commander's concept of operations (anticipated rate of movement and tempo), enemy force locations and organic firepower.⁷ Per Army doctrine, the primary consideration for placement of a FSCL is that it be located beyond the area in which a corps intends to shape the deep fight. Under this premise, the FSCL may be established well beyond the range of cannon and multiple rocket Field Artillery systems.⁸ The firepower that a corps uses to shape the battlespace deep fight is not limited to surface fires, but also includes air-delivered fires. Air Force doctrine has a slightly different take on FSCL placement.

The optimum placement of the FSCL varies with specific battlefield circumstances, but typically it should be placed where the capability to produce the preponderance of effects on the battlefield shifts from the ground component to the air component. In this way, the FSCL placement maximizes the overall effectiveness of the joint force, and each component will suffer the minimum reduction in efficiency. To place the FSCL so deep or shallow that one component is given complete freedom to operate will usually result in the other components being so restricted that overall joint effectiveness suffers.⁹

Deep placement of the FSCL can create situations where the range and density of organic fires when combined with the requisite control of inorganic fires can give an adversary a sanctuary from attack. Conversely, an FSCL not placed deep enough may constrain the ground scheme of maneuver due to the coordination time required to implement an FSCL change. Ideally, tactical units would place the FSCL at a range where most of the organic indirect fires could engage targets short of the FSCL. However, FSCL placement is typically a nominative process with the JFC making the final determination. For a variety of reasons, the FSCL is often placed further out than some tactical ground units and the air component might prefer, hence the continuing debate.

Current joint doctrine makes a single cursory comment on FSCMs in nonlinear operations stating: FSCLs do not have to follow “traditional” straight-line paths; curved and/or enclosed FSCLs have applications in nonlinear joint operations.¹⁰ Air Force doctrine gives a more detailed discussion, but recognizes that FSCMs in a nonlinear environment can be very complex.

One option is to create a new fire support coordination measure, based on a standardized box, circle, or other easily employed shape, to accomplish the same task that the FSCL performs for the linear battlefield. By drawing lines around the areas occupied by friendly troops, properly padded for both close proximity and intended scheme of maneuver, there would be large areas left available for more unrestricted “beyond the FSCL” type of air attack. This discussion presents the concept of nonlinear coordination in very simple terms, as any real example would be very complex and would require great flexibility.¹¹

Battlefield Coordination Line and Airspace Coordination Area

Although not codified as joint doctrine, the Marines have instituted a complementary permissive FSCM to prevent the creation of a perceived sanctuary for enemy forces between the maximum range of organic artillery and the FSCL.¹² The battlefield coordination line (BCL) is designed to allow Marine Air Ground Task force aviation assets to attack surface targets in the ground command element’s area without approval.¹³ To deconflict air and surface fires between the BCL and FSCL, an airspace coordination area overlies the area.¹⁴ An airspace coordination area (ACA) is a three-dimensional block of airspace in a target area, established by the appropriate ground commander, in which friendly aircraft are reasonably safe from friendly surface fires.¹⁵ Threat avoidance, ordnance release altitudes and artillery trajectories are used to determine an ACA’s altitude limits.¹⁶ The the BCL/ACA combination facilitates the expeditious attack of targets short of the FSCL by both surface- and air-delivered fires.

The Kill Box Concept

Similar to the BCL/ACA concept, the kill box concept has been employed to achieve some of the same objectives. The kill box concept, in its present form, was first used in earnest during Operation DESERT STORM. Coalition aircraft were not destroying targets within the Kuwait Theater of Operations as rapidly as desired. One of the adjustments made was to use F-16s as killer scouts to improve target acquisition for incoming flights. Aircraft would be directed to pre-designated 15 by 15 nautical mile areas to attack their assigned targets or more lucrative targets found by the killer scouts.¹⁷ In theory, kill boxes can rapidly open and close, both short and long of the FSCL, to facilitate deconfliction or expeditious employment of air-delivered fires. The merits of this concept led to its inclusion in Air Force doctrine and adoption by three combatant commands.¹⁸ The concept, however, is not standardized across commands and is not fully embraced and explained in joint doctrine. The confusion that exists in this area is not surprising since during Operation DESERT STORM kill boxes and a grid-based reference system were developed together. Joint doctrine adds to the confusion by essentially making the terms area reference system and kill box virtually synonymous in its discussion of common reference systems.

The kill box concept, in theory a FSCM, is addressed in the area reference system section of Joint Publication 3-60, *Joint Doctrine for Targeting*. An area reference system is defined as a three-dimensional reference, enabling timely and effective coordination and control and facilitates rapid attacks throughout the designated joint operations area.¹⁹ Once an area reference system has been developed for a theater, the system may be used to designate control and coordinating measures, like FSCMs and airspace control

measures (ACM). It is important to understand that area reference system and kill boxes are not one in the same. A theater-level area reference system is the framework used to establish kill box parameters. As Joint Publication 3-60 states, theater-level kill boxes can be an effective coordination tool.

Theater-level kill boxes often combine FSCMs with ACMs as a single coordination and control measure. This combination of fire support and airspace coordination enables the use of these area reference systems to be a reactive, timely and simple tool for joint force employment and component integration.²⁰

In publishing the *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets*, the Air Land Sea Application (ALSA) Center is introducing a standardized common geographic reference system (formerly known as the common grid reference system).²¹ The ALSA publication is not joint doctrine, but it can serve as the means for getting a standardized common geographic reference system into joint doctrine. Once a standard has been established, the common geographic reference can be used throughout the future Joint Force to designate:

- location of friendly forces
- surface force maneuver boundaries
- areas of intended attack
- airspace control measures
- fire support control measures
- high threat areas
- terrain or airspace orientation²²

Notes

¹ Joint Publication 3-09, *Doctrine for Joint Fire Support*, 12 May 1998, III-13.

² Ibid, III-13.

Notes

³ Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, 3 September 2003, III-23.

Joint Publication 3-09, III-13.

⁴ Joint Publication 1-02, Joint Publication 1-02, *Department of Defense Dictionary of Military Terms*, 12 April 2001 (as amended 17 December 2003), 199.

⁵ Joint Publication 3-09, A-2.

⁶ Ibid.

⁷ Ibid, A-3.

⁸ Field Manual (FM) 6-20-30, *Tactics, Techniques, and Procedures for Fire Support for Corps and Division Operations*, 18 October 1989, F-3 – F-4.

⁹ Air Force Doctrine Document (AFDD) 2-1.3, *Counterland*, 27 August 1999, 61.

¹⁰ Joint Publication 3-09, A-2.

¹¹ AFDD 2-1.3, 62.

¹² Lieutenant Colonel Michael R. Kennedy and Lieutenant Colonel Larry J. Holcomb, “Genesis and Development of the Battlefield Coordination Line,” *Marine Corps Gazette* 86, Issue 4 (April 2002): 64.

¹³ Ibid, 66.

¹⁴ Ibid.

¹⁵ Joint Publication 1-02, 27.

¹⁶ Kennedy, 66.

¹⁷ Colonel Richard B.H. Lewis, “JFACC Problems Associated with Battlefield Preparation in Desert Storm,” *Aerospace Power Journal* VIII, no. 1 (Spring 1994): n.p., on-line, Internet, 19 February 2004, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj94/lewis.html>.

¹⁸ Major Lynn I. Scheel, “Bullet Background Paper on Common Grid Reference System,” (Maxwell AFB, Ala.: Headquarters, Air Force Doctrine Center, 20 November 2003), 1.

AFDD 2-1.3, 64.

¹⁹ Joint Publication 3-60, *Joint Doctrine for Targeting*, 17 January 2002, D-1.

²⁰ Ibid, D-1.

²¹ *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets*, Air Land Sea Application Center, 20 April 2004, G-1.

²² Scheel, 1.

Acronyms

3ID(M)	3rd Infantry Division (Mechanized)
ACA	airspace coordination area
ACCE	air component coordination element
ACM	airspace control measure
AEF	air and space expeditionary force
AEG	air and space expeditionary group
AES	air and space expeditionary squadron
AETF	air and space expeditionary task force
AEW	air and space expeditionary wing
AFDD	Air Force Doctrine Document
ALSA	air land sea application
AOC	air and space operations center (formerly air operations center)
AOR	area of responsibility
ASOC	air support operations center
ATACMS	Army Tactical Missile System
BCL	battlefield coordination line
CAS	close air support
CCE	component coordination element
CGRS	common grid reference system or common geographic reference system
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
COMAFFOR	commander of U.S. Air Force forces
DASC	direct air support center
DOTMLPF	doctrine, organization, training, material, leadership, personnel and facilities
EBO	effects-based operations
ETAC	enlisted terminal attack controller
ETO	effects tasking order
FAC(A)	forward air controller (airborne)
FECC	fire and effects coordination cell
FM	Field Manual
FIST	fire support team
FSCA	fire support coordination area
FSCL	fire support coordination line
FSCM	fire support coordination measure
HSOC	home station operations center
JACE	joint air control element

JAOC	joint air and space operations center (formerly joint air operations center)
JCAS	joint close air support
JIACG	joint interagency coordination group
JIMP	Joint Vision Implementation Master Plan
JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint force land component commander
JOC	Joint Operating Concept
JOpsC	Joint Operations Concept
JSTARS	joint surveillance targeting attack radar system
JTA	joint tactical action
JTAC	joint terminal attack controller
JTASC	joint tactical action support center
LOS	line-of-sight
MAGTF	Marine Air Ground Task Force
MC02	Millennium Challenge 2002
NLOS	non-line-of-sight
OEF	Operation ENDURING FREEDOM
OIF	Operation IRAQI FREEDOM
PEL	prioritized effects list
SEZ	special engagement zone
SJFHQ	standing joint force headquarters
SOF	special operations forces
TAC	terminal attack controller
TACP	tactical air control party
TTP	tactics, techniques and procedures
UA	Unit of Action
UAV	unmanned aerial vehicle
UE	Unit of Employment
UNAAF	Unified Action Armed Forces
USJFCOM	U.S. Joint Forces Command
USSOCOM	U.S. Special Operations Command
WF HQ	Warfighting Headquarters

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